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# **A Study On Human Rights and Constitutional Protection To Women**

**Nakul Bhatnagar<sup>1</sup>, Shailesh Sharma<sup>2</sup>**

*<sup>1,2</sup>School of Legal Studies and Governance, Career Point University, Kota*

**ABSTRACT:** *This paper is all about human rights and constitutional protection to women. Researchers have conducted a research on the meaning of human rights and discrimination on women in India. The constitution of India prohibits discrimination on the basis of religion, race, cast, sex and place of birth. The researcher argues that discrimination is a form of discrimination and should be denounced. In the second part of this paper, it talks about how women are to be treated equally on all fronts. This means that all the laws for both will be applied to them. To give reasons for this section is a very difficult task because it does not talk about anything else but about giving equality to the woman. Thus, giving them equality means making laws which are applicable to everyone.*

*Keywords: Discrimination, Victim blaming, Gender-based violence, Trauma, Domestic violence.*

## **I INTRODUCTION:**

According to the Constitution, "all persons are equal before the law and entitled without any discrimination to the equal protection of the law" (clause 1). The same idea is echoed in clause 5. The Constitution also prohibits discrimination on the basis of religion, race, cast, sex and place of birth.

In all societies the individual usually has the right to practice any religious belief that he or she chooses without anything being imposed on them by society. The privilege that this gives is often abused however as individuals can then discriminate against others based on these religions and ethnicities- thus leading to racism and prejudice which is a

form of discrimination too. Many religions are now becoming the cause of this prejudice as they preach hatred.

The constitution of India has a chapter titled “fundamental rights.” Article 15 of the constitution holds that “the State shall not deny to any person equality of the law or the equal protection of the laws within the territory of India” and that “any discrimination on the grounds of religion, race, cast, sex and place of birth or economic status will be an offence punishable in accordance with law”. Human rights are the basic freedoms and legal entitlements that every person has simply because they are human beings. They include freedom from slavery or servitude, freedom of movement, freedom of expression, freedom of religion, equality before the law and protection against discrimination.

The most extreme example of this is when people become terrorists and start to fight with other countries and kill innocent civilians just because they belong to a different religion or nation. Religion often influences people drastically- the world is divided into two groups; those who believe in God and those who don't. There is no point in trying to argue about opinions,

This will always be labeled as an extremist due to religious belief. If all of us truly believed in God, then there would be no discrimination against anyone, but see how many people are killed just because they are a different religion? Terrorism must stop and these extremist beliefs should be denounced.

Discrimination is a deep rooted problem that has been around for generations. People have either judged you or even attacked you continuously because of it. They might have also done the same towards someone else based on their race, religion or beliefs. People should be able to express their opinions and do what they want without being intimidated. The government should take action against all these acts of discrimination and take the necessary steps to stop it from happening again and again.

Racial discrimination is a major problem in many societies. There are various incidents of race related crimes that occur every year. People often hurt others who are from a different race; they attack them and beat them up just because of their skin colour. This

behaviour should not be allowed to carry on and the government should take suitable measures against it. Racism is social problem that has an effect on communities, politics and society as a whole. It has been around for years, but still no concrete actions are taken against the perpetrators of racism.

It starts with a very interesting, informative discussion on the meaning of Human Rights and Constitutional Protection to women. The first section has an overview of what it means to be a human, the rights of a human, and the basic conception that everyone is born free and equal in dignity. Moreover, people are entitled to these rights without any discrimination on grounds like sex, race color. This is because they are endowed with life and liberty. These rights cannot be taken away from any individual by any person whether public officials or other individuals without their consent or infringement of articles by constitutions and laws which protect them against that infringement.

## **II LITERATURE REVIEW:**

The researcher has made a thorough research on these existing literature and the following literature sources are as followed:

**1. According to Thomas Jefferson** in 1776 during the beginning of American Revolution it is said that “all are equal before law and are entitled without any discrimination to equal protection of law.

**2. According to Mr. Kotwal** on 18 november 1952 it is said that Article 15 Clause (3) must not be read as a proviso, then it would completely nullify one of the important ingredients of Article 15 Clause (1). It is said that discrimination on the ground of sex is not permissible under article 15 clause (1).

**3. According to Rasida Begum** in 2009 The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The Constitution not only grants equality to women, but also empowers the state to adopt measures of positive discrimination in favour of women.

Violation of women rights is one of the most direct expressions of the power imbalance between men and women.

**4.According to Devare Suresh** on 5<sup>th</sup> july 1986 Gender equality is enshrined within the Indian Constitution in its Preambl, elementary rights, elementary Duties and Directive principles. However, additionaly empowers states to adopt measures of positive discrimination in favour of women.

### **III Research Methodology**

#### **Research Question:**

The researcher intends todo an exploratory investigation on the following research topic after evaluating the gaps in the existing literature review. The research question are as follows:

- 1.Is it possible to realize human rights when resources are limited?
- 2.Whether India has suficient legal provisions to protect women’s basic rights?

#### **Research Objective:**

- 1.Knowledge about the human rights and deep insights about the provisions.
2. Aware women’s about their basic rights and protection.
- 3.Human rights are the rights inherent to all human beings, regards race, sex, nationality,language , religion or any other status .
- 4.Human rights include right of life and liberty , freedom from torture,freedom of opinion and expressions and many more.

### **Chapterization:**

The research paper was prepared on the non-doctrine basic they are of two types primary and secondary. The research was based on the secondary data. Secondary data have been collected from The Gazette of India, journals, websites, articles, blogs and so on.

It believe that human rights can be observed if there is more than enough money and resources for all people. But is this really tre/ This question was asked by the human rights law firm Adalah in a study about whether or not it is possible for human rights to exist in a world with too much money and resources. The answer is no> It does not seem that there are any international laws stating how to provide for anyone despite the fact that there is more than enough money and resources available to do so. The study says this because the wealthiest people are greedy, selfish, avaricious individuals who only care about themselves. They do not care about other humans, so they will not donate their money to help the cause of human rights. These people benefit from war and genocide, so who can blame them for keeping their money?

In the past few years, India has been the subject of much attention-its growing economy and global influence have made it a visible presence on global news networks. One issue that has long been discussed in India's role on women's rights in comparison to other nations. While they seeing many more programs supporting female education and health, there is still debate over whether or not strict legal provisions exist to protect women in India. There is no question that the rights of women are a hot button issue in India. There has been a push recently to make laws more favourable towards women, but it's important to remember that historically, individual states have been able to amend colonial-era laws regarding marriage and divorce. Additionally, there is still a great discrepancy between the rights of men and women in regards to property ownership. In effort to understand how India treats its women legally. It begins by looking at recent reforms which are intended to make women safer.

1.In 2005 Indian parliament passed the law Criminal Law (Amendment) Act – commonly known as The Anti-Rape Law.



2.The law made stricter penalties for sexual assault and rape. A particularly controversial part of the law increased the length of a crime called “Culpable Homicide” to twenty years, which include rape.

3.Prior to this law, a rape charge had only brought life imprisonment.This new law was introduced in an effort to reduce what is called “insider attacks”-sexual assaults committed by individuals who are acquainted with the victim.Under this law it became easier for women who were assaulted by others they knew(which comprises 98% of all sexual violence cases in India).

4.To press charge against their attacks.

5.In 2013 India made more amendments to the law, including a new definition of rape which expanded the age of girls who are able to be considered victims.

6.But in 2014,a serious flaw was found in the law when four judges in the Delhi High Court ruled that a rape victim was not eligible for compensation. This put women seeking justice at risk as compensation is seen as incentive for reporting crimes.

7.The burden of proof falls on the victim and that does not always result in fair treatment. India has approximately 19413,rape cases pending from 2013-2016.

#### **PROHIBITS THE PRACTICE OF HUMAN TRAFFICKING IN INDIA:**

India is one of the most populated and economically prosperous countries in the world. In 2013, India doubled its GDP as people took to a variety of new jobs and opportunities. However, despite India’s growing success, human trafficking has created many challenges to its economy that should not be ignored. For example, human trafficking often forces women into prostitution which affects the Indian economy by slowing productivity rates and discouraging investment into the country. Because of this, the government of India has officially sought to prohibit human trafficking in an effort to



better their economy as well as save some lives from being taken advantage of by these terrible practices.

Human trafficking is a global issue that affects countries all over the world with similar issues occurring elsewhere in Asia and Africa. Many of the victims are either orphans or from poor families who need the money to survive. Although many traffickers come from countries where prostitution is legal and there are frequent reports of child sex trafficking, these acts often go unreported due to trust issues and fear of other repercussions. These situations can cause many social issues that ripple throughout a country such as family separations, divorce, disease and poverty. India has suffered some of the worst effects caused by human trafficking locally with an estimated 300,000 people in India being held in slavery-like conditions. In comparison to other countries, India is currently one of the top destinations for victims rescued worldwide due to its high population growth rate which ranks among the highest in the world right now.

This article talks about how the Indian constitution has a provision to protect women. This is one of those provisions which is not a part of the civil, criminal, or procedural laws that are enforced in India. What it does is gives protection to classes who will be protected because they have been denied their basic rights by these laws. However while this is a good provision it has some negative effects on society as well. If look at the first reason given in the article, it simply means that women should not be discriminated against. This is a good provision but it has one problem. By giving this equality to women we are making it more difficult for the country because both the women and men will have to play by equal rules which means that both will be bound by some of these laws. <sup>1</sup>According to Yusuf Abdul Aziz v. State of Bombay, In this case it was said that section 497 of the Indian Penal Code states that the adultery can be committed by man only an women cannot be punished even as an abettor.

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<sup>1</sup>Yusuf Abdul Aziz vs The State Of Bombay on 10 March, 1954 1954 AIR 321, 1954 SCR 930



This may sound good in theory but in practical terms it is a different story altogether. For instance, if a man abuses a woman he will be given his just punishment. But what if the same man beats his child? Will the same punishment be given to him? The answer is no because when it comes to children the laws are not applicable for them. <sup>2</sup>According to Paramjit singh v. state of Punjab the court held that if the seat of sarpanch of a village is reserved for schedule cast, then both men and women belonging to schedule cast category can contest for the election for the said post as the eligibility for the schedule cast and the nature of constituency as they represent them panches.

In the second part of this article, it talks about how women are to be treated equally on all fronts. This means that all the laws for both will be applied to them. This would mean that one of the people who were denied their basic rights by these laws will now be given equality and therefore the laws will apply to them. To give reasons for this section is a very difficult task because it does not talk about anything else but about giving equality to the woman. Thus, giving them equality means making laws which are applicable to everyone.

#### DOCTRINE:

The doctrine of reasonable classification is mere judicial test to determine whether there is arbitrariness in the state action if the state action in question does not pass the test as laid down by the doctrine it is considered arbitrary and since it is arbitrary it will be unconstitutional as per the principle of article 14. This ensures that people similarly situated are tested equally. Doctrine of reasonable classification is important in this respect, but, at the same time, the courts and the Government must ensure that such classification is reasonable and free from any arbitrariness.

#### IV Suggestions:

Women are a silent minority in the world. The constitution is our weapon against sexism and injustice. The best way to keep fighting is by educating ourselves on what's going on

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<sup>2</sup>Paramjit Singh vs State Of Punjab in 2009

in this country and across the globe. It is the duty of the state to make special provisions for women and provide job opportunity and should be equally treated as men. One suggestion that has been put into use by the government and police officers is protection on women that are visible during night time hours. This strategy has definitely helped increase the amount of crimes being attempted against women, but it can cause some problems as well. One problem with police officers placing protection on women and children that are under high risk of being victims of crime is that it covers everyone. This means that lower risk people by picking out one person at random and then attacking them. It's possible to limit this problem by putting a code on which areas the protection will be given to certain people. This would ensure the safety of those in need during night time hours. Safety measures like these can be important, especially for women who want to feel safer while outside of their homes.

#### **V Conclusion:**

According to the constitution, all persons are equal before the law and entitled without any discrimination to the equal protection of the law. The constitution of India has a chapter entitled "fundamental rights". Article 15 of the constitution holds that "the state shall not deny to any person equality of the law or the equal protection of the laws within the territory of India" and that "any discrimination on the grounds of religion, race, cast, sex and place of birth or economic status will be an offence punishable with law". They include freedom from slavery or servitude, freedom of religion, equality before the law and protection against discrimination. The research paper was prepared on the non-doctrine basis they are of two types primary and secondary. You may believe that human rights can be observed if there is more than enough money and resources for all people. One issue that has long been discussed in India's role on women's rights in comparison to other nations. Additionally, there is still a great discrepancy between the rights of men and women in regards to property ownership. The law made stricter penalties for sexual assault and rape. A particularly controversial part of the law increased the length of a crime called "Culpable Homicide" to twenty years, which include rape. But in 2014, a serious flaw was found in the law when four judges in the

Delhi High court ruled that a rape victim was not eligible for compensation is seen as incentive for reporting crimes. The burden of victim and that does not always result in fair treatment. This is one of those provisions which is not a part of the civil, criminal, or procedural laws that are enforced in India. If we look at first reason given in the article, it simply means that women should not be discriminated against. This may sound good in theory but in practical terms it is a different story altogether. In the second part of this article, it talks about how women are to be treated equally on all fronts.

#### **VI References:**

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2. <https://www.researchgate.net>
3. <https://hrlibrary.umn.edu>
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# **Domestic Violence Against Women in the Modern Society**

## **Pushpendra Gurjar**

*School of Legal Studies and Governance, Career Point University, Kota*

**Abstract:** *Throughout the world domestic violence is a common issue for the females irrespective of the caste, creed, religion and ethnicity. There are numerous type of domestic violence not only a partner beating wife and these violence have a severe effects on the health of the victim. In broad terms domestic violence can be classified in 4 major types which are-*

- 1. Physical violence*
- 2. Emotional violence*
- 3. Financial violence*
- 4. Sexual abuse*

*Such violence has various fronts or disguise. Above mentioned violence are made punishable under the DV act 2005. Having laws regarding such laws is insufficient as a large no. Of females are un aware of such laws and many couldn't even identify that they are exposed to the domestic violence in their daily life by their intimate partners and in society like India instead of encouraging the victim to report such violence they are suppressed by stating that what the society will think about them if they report their partners leading the victim to compromise in the conditions instead of making report making their conditions worsen more and more and from simple beating it may lead to emotional violence or rape and even murder.*

*Keywords: Domestic violence, Gender-based violence, Trauma, Victim blaming,*

## **I INTRODUCTION**

Domestic violence is a pervasive and complex social issue that has been recognized as a serious violation of women's human rights. It encompasses various forms of physical, sexual, emotional, and economic abuse that occur in the home, perpetrated by intimate partners or family members. Regardless of socio-economic status, religion, or caste, women across society are subjected to DV, resulting in severe and long-lasting consequences for their physical and mental health, social and economic wellbeing, and overall quality of life. The perpetrators of such violence are often individuals who are closely related to the victim,

creating significant barriers to reporting and seeking redress. This paper aims to provide a comprehensive understanding of the various types of domestic violence, including physical, sexual, economic, and mental violence. Additionally, it will examine the underlying factors that contribute to the perpetration of such violence and highlight the significant role of cultural and societal norms in perpetuating violence against women.

## **II Literature Review:**

The researcher has made a thoroughly research on these existing literature and the following literature sources are as followed:-

### **1. “Violence against Women,” published in 1998, Ram Ahuja**

In this book the author discusses the issue of wife battering, noting that while it may be a traditional practice, it is not legally sanctioned. Ahuja provides an in-depth analysis of the factors that contribute to such violence and explores the legal and social responses to this pervasive problem. His work sheds light on the need for greater awareness and action to address the issue of violence against women.

### **2. Dr Saraswati Mishra In her book “status of Indian women(2016)”**

Mentioned about the violence against women that is unchanged biological and psychological forms has remained in practice send thousands of years in the India the main cause of the phenomena lies in the complete subordination of dependence of women on male dominant Society. Woman biological structure and less physical health as compared to the men made her more vulnerable to the violence by the males. She pointed out that she pointed out that over social structure has in-built discrimination against women which raises violence against them. Our country is changing from traditional to modern in many aspects but our believes, thoughts are still not changed hence the women going out for the education or the work have a double burden of work and tension.

### **3. Nehal Ashraf in her book “Crime against women” , commonwealth publishers 1997**

She talks about the bride burning and wife battering. She pointed out the customs of dowry is a universal concept. According to Nehal common name to wife battering can be silent crime. She also said that wife battering is commonly accepted by the

society and is not given much concern and if wife tries to oppose she is considered to be of low morale.

#### **4. Vidushi and Sethi (2018) in their article "Domestic violence**

Discussed the various synonyms used for DV, including spousal abuse, family violence, and intimate partner violence. The authors highlighted both physical and non-physical forms of abuse, such as biting, kicking, slapping, controlling, dominating, and economic neglect, which constitute mental and emotional abuse

### **III Research Methodology**

#### **Research Question:**

1. What factors contribute to women's decision to remain in domestically violent relationships?
2. To what extent does financial incapability impact the occurrence and severity of domestic violence?
3. What are the available resources and interventions that can aid victims of domestic violence and assist in preventing future instances of such violence?

#### **Research Terminology**

Domestic violence against women evidence includes a range of concepts related to various forms of abuse that occur within relationship and include terms such as domestic violence, which refers to any form of physical, sexual, emotional, or economic abuse that takes place within a domestic setting.

In this paper the researcher mainly picked for doctrinal research methodology, and the sources are collected beneath through secondary data.

#### **Chapterization:**

##### **Factors contributing DV-**

The contributing factors to domestic violence against women are complex and multifaceted. These factors can be categorized into individual, relational, societal, and cultural factors, and all these factors can interact and influence one another. Here's a brief explanation of each of these contributing factors:

1. Individual factors: These factors are related to the perpetrator's characteristics, such as their mental health, history of violence, and substance abuse. Perpetrators may also have low self-esteem, poor impulse control, and a sense of entitlement or ownership over their partner.
2. Relational factors: These factors relate to the dynamics between the perpetrator and victim, such as power imbalances, control issues, and conflict resolution skills. Relationships where one partner has more power or control than the other are more likely to experience domestic violence.
3. Societal factors: These factors include the broader social context in which domestic violence occurs, such as poverty, unemployment, and social isolation. Social factors can also include attitudes towards violence, gender roles, and the use of violence as a means of conflict resolution.
4. Cultural factors: These factors are related to the cultural norms and beliefs that perpetuate violence against women. For example, in some cultures, it may be considered acceptable for men to use violence to assert their authority over women or to punish women who do not conform to traditional gender roles.

Gender inequality is one of the key factors that contribute to domestic violence against women. Women are often seen as inferior to men and are therefore more likely to be subjected to violence. The power dynamics between men and women are also a contributing factor. Men often hold more power in society than women and are more likely to use violence as a means of asserting their dominance.

It is important to note that these contributing factors are interrelated, and addressing domestic violence requires a multifaceted approach that considers all these factors. Effective prevention and intervention programs should address individual, relational, societal, and cultural factors to prevent and reduce domestic violence against women.

Let's have look towards some statistical data-According to the **National Crime Records Bureau (NCRB)** in India, there were **4,05,861** cases of crimes against women, including domestic violence, in 2019. Out of these cases, **30.9%** were cases of **cruelty** by their male partners or his family members.

Furthermore, the NCRB reported that in 2019, **65.2%** of the total domestic violence cases reported were by married women. In addition, more than **75%** of the women exposed to were in the **18-45** years of range



However, it is important to note that domestic violence is often underreported in India due to social stigma, fear of reprisal, and lack of trust in the legal system. Therefore, these statistics may not accurately represent the actual prevalence of domestic violence in the country.

### **Impact of DV on victim**

DV can have significant physical, psychological, and emotional effects on women's health and well-being. One who experience domestic violence may suffer from various short-term and long-term health issues.

The physical effects of DV may range from small injuries to death causing chances. Physical abuse can result in bruises, cuts, broken bones, and head injuries. It can also lead to chronic pain, chronic fatigue, and gastrointestinal problems. One who experience violence during pregnancy may experience complications, including miscarriage, premature birth, or low birth weight.

The psychological and emotional influence of DV on women can be severe and long-lasting. Women who are subjected to DV may experience depression, anxiety, post-traumatic stress disorder (PTSD), and other mental health problems. They may also suffer from low self-esteem, feelings of shame and guilt, and difficulty trusting others. These effects can persist long after the abuse has stopped.

DV can also affect women's overall well-being, including their ability to work, socialize, and engage in healthy relationships. It can lead to isolation, financial uncertainty, and a lack of accessibility to healthcare or any other resources.

Overall, domestic violence can have a devastating impact on women's physical, psychological, and emotional health and well-being. It is essential to recognize the signs of abuse and provide support to those who are experiencing it to help them heal and rebuild their lives.

### **Prevention Strategies to stop DV**

In our country, DV against women is a universal problem which affects large scale of women. To address this issue, various prevention strategies have been implemented to raise awareness, provide support to victims, and change societal attitudes towards violence against women.

- Legal measures: India has enacted several laws to protect women from domestic violence, including the “**Protection of Women from Domestic Violence Act, 2005**”, which criminalizes domestic violence and provides legal remedies for victims. This act criminalizes not only the physical violence but sexual, verbal, economical violence too. Under this law, women who are subjected to domestic violence can obtain a protection order, a residence order, a monetary relief order, and other types of legal remedies.

In the case of “**S.R. Batra vs. Smt. Taruna Batra(2017) 3SCC 169**”, the Supreme Court of India held that the Protection of Women from Domestic Violence Act, 2005, is a civil law and can be invoked in any civil court. This decision broadened the scope of the act and made it easier for victims to seek legal remedies.

Further the “**Dowry Protection act, 1961**”, which makes the dowry giving and taking cognizable and non bailable offence to protect women against DV.

**“Section 304B IPC Dowry Death”**-The court shall Presume death as dowry death where death is caused within 7years of marriage by burn or bodily injury where it’s shown that she was subjected to cruelty or harassment for demand of dowry and made it punishable with Imprisonment of term not less than 7 years and may extend to L.I.

In the case of “**State of West Bengal vs. Sk. Saddam Hussein (2016) SCC Online Cal 13806**”, the Calcutta High Court held that demanding dowry is a form of domestic violence and can be punished under the Protection of Women from Domestic Violence Act, 2005. This decision highlighted the interconnection between dowry-related violence and domestic violence against women.

- Awareness campaigns: Various awareness campaigns have been launched in India to educate the public about the dangers of domestic violence and encourage victims to seek help. These campaigns often use mass media, such as TV, radio, and social media, to reach a larger population.

In 2017, the Indian government launched a national program called the "One Stop Centre" to provide integrated support and services to women affected by violence, including domestic violence. These centres provide legal aid, medical assistance, counselling, and other supporting services to DVvictims. Community-based interventions: Community-based interventions, such as support groups, counselling services, and helpline, provide victims with a safe space to share their experiences and receive emotional support. These interventions also help to break the silence surrounding domestic violence and encourage victims to seek help.

- Education programs: Educational programs that promote gender equality and non-violent conflict resolution can help to prevent domestic violence by changing societal attitudes towards violence against women. These programs can be implemented in schools, workplaces, and other community settings.

The government has also implemented the “**Beti Bachao Beti Padhao**” (Save the Daughter, Educate the Daughter) scheme to promote gender equality and address the issue of female foeticide in India. The aim of this scheme was to educate the females.

- Economic empowerment: Economic empowerment programs can help to reduce the incidence of domestic violence by providing women with financial independence and greater control over their lives. This can include job training, microfinance initiatives, and entrepreneurship programs.

Some of govt. Schemes to support Women-

1. Mahila E-Haat: This is an online platform that enables women entrepreneurs to sell their products directly to customers across the country. It is managed by the “**MWCD**”.
2. Stand-Up India: Under this women & SC/ST entrepreneurs are given loan from 10 lacs upto 1crore to setup Greenfield enterprises & its implemented by the Department of Financial Services.
3. Pradhan Mantri Mudra Yojana: This scheme provides loans up to Rs. 10 lakhs to women entrepreneurs to start and grow their businesses.
4. National Skill Development Corporation (NSDC): The NSDC provides training and support to women entrepreneurs through various programs and initiatives.
5. Start-up India: This initiative aims to promote entrepreneurship and innovation in India by providing funding, mentorship, and other support to start-up's&controlled by the Department for Promotion of Industry and Internal Trade.
6. Udyogini Scheme: It provides monetary assistance and training to women entrepreneurs to initiate and operate their businesses &its controlled by the Department of Industries and Commerce.
7. Mahila Coir Yojana: This scheme provides financial assistance and training to women to start coir-based businesses & Its controlled by the Ministry of Micro, Small and Medium Enterprises.

8. Stree Shakti Package for Women Entrepreneurs: This scheme provides loans at a concessional rate of interest to women entrepreneurs & Its controlled by various banks and financial institutions.

While these prevention strategies have shown some success in addressing domestic violence against women in India, there is still a long way to go to eliminate this pervasive problem. Continued efforts are needed to raise awareness, provide support to victims, and change societal attitudes towards violence against women. Additionally, greater resources and political will are needed to fully implement existing laws and policies and improve access to support services for victims.

### **Findings**

There are several factors that may contribute to a woman's decision to remain in a domestically violent relationship:

1. Fear: The fear of retaliation or further violence may prevent a woman from leaving an abusive relationship.
2. Economic dependence: Women may stay in abusive relationships due to financial dependence on their partner, especially if they have children to support.
3. Social and cultural norms: Societal pressure and cultural norms that prioritize keeping the family together may make it difficult for women to leave an abusive partner.
4. Emotional attachment: Women may have emotional attachment to their partners and may hope that the abuse will stop.
5. Lack of support: Women may feel isolated and lack the support network necessary to leave an abusive relationship.
6. Psychological manipulation: Abusers may use psychological manipulation, such as gas lighting and emotional abuse, to make their partners feel like they are responsible for the abuse and should not leave the relationship.

It is important to note that every situation is unique, and the reasons why a woman may choose to stay in an abusive relationship are complex and varied.

### **SUGGESTION AND CONCLUSION**

The study helps in understanding the influence of DV on the victims and its reasons certain suggestions for the purpose are:-

#### **Suggestion**

Major issue is not the domestic violence to which victims are exposed but the problem is that they are not opposing such violence's and start compromising with them and try to justify the

violent actions of the partner/accused and start convincing themselves that the conditions will improve on their own. Here would like to suggest that the domestic violence conditions escalate vigorously. And if one doesn't oppose such violence instantly they may start with simple beating and may end up to rape or murder.

In case of having child such violence produce a severe impact on their minds and being witness to domestic violence in their home they also develop a violent mentality and become violent in their further life.

- Strongly enforcing the existing laws- There are a large no. Of the laws in favour of the women and if they are enforced tightly the ratio of crime against women would drastically reduce. A great issue is that the government makes the laws as per requirement but the laws are loosely enforced giving chances to the offenders to repeat the offence.
- New counselling centres- There should be establishment of new counselling and helping centres operated by the government where the women who are victim of violence can stay for short time and can come out of the trauma they suffer because of the violence they suffered.
- Economic status improvement- I suggest that the government should emphasize on the making of policies which enhance the financial conditions of the females in the country for those females who are economically incapable of taking care of themselves and due to which they tolerate any type of violence against them by the husband or family and don't oppose.

### **Solutions and Actions for Victims**

Domestic violence is an offence of serious nature and is needed to be reported but it remains covered because of many reasons like sometimes the victims are unaware of the offences which are under domestic violence and they are suffering from such while sometimes they don't have enough knowledge that how to respond such violence and report it. Public should be made aware of the different resources available to get help against domestic violence like Police, legal prosecution, emergency shelters etc.

### **IV Conclusion:**

The Indian Constitution provides various rights aimed at achieving gender equality for women. However, despite these rights and principles, certain types of violence against women in India are not classified as criminal offenses, and are therefore non-punishable. For

instance, marital rape is not legally recognized as a crime. While some forms of violence against women, such as rape and dowry deaths, are covered under criminal laws, domestic violence by a husband resulting in harm or grievous injury to his wife is not always considered an offense. In such cases, lack of evidence and support from the victim's family and society often hinder investigations by law enforcement agencies.

Violence against women is a curse to a country's development. As **Pt. Jawaharlal Nehru** **J**once remarked, "**you can tell the condition of a nation by looking at the status of its women.**" Therefore, it is essential to ensure gender equality and protect women's rights for the nation's progress. To achieve this, governmental authorities alone cannot end violence against women. It is also important for families and society to play their role in educating girls about offenses and violence against women and supporting them in protesting against such violence.

In conclusion, while the Indian Constitution provides rights for women's equality, there are still gaps in the legal system and societal attitudes that need to be addressed to eliminate violence against women. A collective effort is required to end this curse and promote gender equality for the nation's progress.

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## Discrimination And Reservation System For The Backward Classes Based On Caste

**Radhika Sharma<sup>1</sup> Mithlesh Malviya<sup>2</sup>**

*<sup>1,2</sup>School of Legal Studies and Governance, Career Point University, Kota*

**ABSTRACT:** *This Research paper is all about Discrimination and Reservation System For The Backward Classes Based On Caste. As Kurmana Simha chalam 2007, Said that in today's india ,caste based reservation still existed. The National Human Rights Commission recently expressed their concerns about the treatment of Dalit's and Adivasis (The Scheduled Castes). Caste based reservations also violate one of the most fundamental principles in Western philosophy: equality. Caste based reservations also violate one of the most fundamental principles in Western philosophy: equality. The National Human Rights Commission recently expressed their concerns about the treatment of Dalit's and Adivasis (The Scheduled Castes). Intergenerational poverty is more pronounced among the scheduled castes and tribes since the poorest Patels are likely to be from families where even grandparents were poor.*

*Keywords: Discrimination, Victim blaming, Gender-based violence, Caste System, Domestic violence.*

### **I INTRODUCTION:**

In India, being from a lower class category (a scheduled caste or scheduled tribe) is closely linked to intergenerational poverty. And it was this link that led us to think about why reservation--an anti-poverty mechanism intended for disadvantaged groups--is not reducing poverty in India. In this blog post, we argue that it is because of the limitations of the reservation framework and suggest actionable steps to improve outcomes for those who benefit from reservations.

The policy of reservations is well thought out. It has addressed a major social problem, while keeping within the constitutional constraints. However, there are issues inherent in



the design of reservation that leads to inadequate redistribution and worsens intergenerational poverty among those who benefit from it.

Reservation is intended to help disadvantaged groups improve their socio-economic position. Intergenerational poverty is more pronounced among the scheduled castes and tribes since the poorest Patels are likely to be from families where even grandparents were poor. This means that children and grandchildren of these families are destined for life of deprivation, with lower educational attainment as an expected outcome.

The policy of reservation is poorly designed to address this problem since it is not based on need, but on a group's birth. Inequality in India is driven by the same factors that cause inequality in other countries: human capital and economic growth. Intergenerational poverty can be reduced only if economic growth translates into improving the socio-economic position of children and their parents. And this requires investments in development that lead to a more inclusive society.

Caste System in India has been a major hurdle for the society to progress and break free from poverty. However, it has been over a century since the British introduced caste system to India. Considering that time is of essence, reservations system was implemented in 1956. It was an effort made by the Indian government to provide equal rights to backward classes in education and employment opportunities without making any major changes or impact on caste hierarchies. Initially, reservations were limited only for backward castes but now they have been extended to “others” as well which includes SCs and STs etc.

The system has been beneficial but at the same time, it has also been controversial. Reservation policy has faced a lot of criticism from various individuals and organizations who question its fairness and effectiveness. This is due to many factors like reservation that harms meritocracy, reservation for certain groups based on caste etc. However, given the fact that 85% of India's population belongs to backward classes it is imperative that we continue with this policy to ensure a brighter future for our country as well as its people.

Urgent need for reservations in education and employment opportunities for Backward Classes was felt by the British during their rule in India (1857-1947). Before the British came to India, the society was based on castes. It was a tradition that existed over several centuries till date. The importance and respect of a person in the society was determined by his or her castes. Brahmans were considered as most superior and a threat to their status led them to leave their traditional jobs such as priesthood, writing and teaching etc. This caused employment crisis in these sectors leading to increase in population of these communities who were economically backward. This also led to an increase in number of unemployed people who did not have any other option but to work on daily wages basis (Kirloskar, 2013). The caste system is alive and kicking in India. This practice has been prevalent since ancient times. Even though government of India has taken several steps to abolish this discriminatory practice, the system continues to exist. What's worse is that it is being practiced even today.

According to the National Crime Records Bureau (NCRB), around 31 percent of Indians belong to Scheduled Castes or Scheduled Tribes. These communities continue to face discrimination and social prejudice due to their low socioeconomic status.

Although the Indian constitution prohibits discrimination on grounds of religion, race, creed, color, sex, language, etc., the implementation of reservation policies is not satisfactory. The government should take concrete steps to ensure the eradication of casteism and social equity.

## **II LITERATURE REVIEW:**

The researcher has made a throughly research on these existing literature and the following literature sources are as followed:

**1.According to om prakash Sharma** ,2013 he said that Indian society is been full of inequalities. It was a caste stratified hierarchial society which had been discriminated and denied the bare human rights. Members of lower caste always suffers from discrimination in all areas of life .the worst effect is to access knowledge and and learning to denied the

lower castes. Economic backwardness brought social backwardness which is depriving the dignity of life.

**2.According to kapil sibal** said that caste is centre of arithmetic of politics. They personify the political leaders,the cause of caste less india and embrace for political mileage .caste is to stay for long time to come.better for political parties for accept the reality of caste and to deal wih them to say they do not believe in caste based politics.

**3.According to kurmana simha chalam** 2007, Said that in today's india ,caste based reservation still existed. It introduces to bring equality in education then reservation extended to other sectors also development process and to overcome the economic inequalities to caste.

**4.According to Smita Narula** 2008,It said that ,In india lives today is a environment for its presence,world's largest democracy for a progressive and to protect the constitution , a system of laws which bare designed and to prescribe and punish acts of discrimination on basis of the castes it also include constitutionally reservations for dalits, so called untouchables.

### **III Research Methodology:**

#### **Research Question:**

- 1.Whether cast based reservations are itself discriminatory?
- 2.Does India really need reservations?

#### **Research Objective:**

1. Gaining deep research and knowledge about reservations.
2. The Indian reservation is to improves the social and educational status for the unprivileged community and to improve their lives.
3. To promote and advanced the backward classes.

4. To justify the past and historical injustices against the backward society.

### **Chapterization:**

In caste-based reservations, the government gives preferential treatment in education and employment opportunities to members of certain castes. This social policy can either be a form of affirmative action in order to address systematic discrimination or an example of its own form of discrimination. This question and use relevant evidence from India's Constitution, literature on caste privilege, and Article 15(4) as a comparison. The affirmative action in education does not violate the Constitution as it is justified on grounds of equality, but caste-based reservations do violate Articles 15(4) and 16.

Article 15(4) of the Indian Constitution states, "No person shall be entitled to receive aid from the state unless he is a citizen of India and is domiciled in India." These two requirements are upheld by Article 16: "No citizen shall be deprived of his citizenship except under authority of law. These articles mean that any person who is neither a citizen or domiciled in India should not receive preferential treatment. This means that caste based reservations might be a form of discrimination.

The United Nations Declaration of Human Rights states, "No-one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of law against such interference or attacks." caste based reservations violate this declaration as members of certain castes are denied access to education and employment opportunities. As a result, they are subjected to systematic interference with their privacy.

Caste based reservations also violate one of the most fundamental principles in Western philosophy: equality. However, equality is used in different ways throughout constitutional literature on affirmative action policies. It is used as a substantive principle, in which it means no discrimination of any kind. It is also used as a formal principle, in which it means impartiality.

When equality is used as a substantive concept, Article 15(4) of the Constitution is relevant. This article states that "the State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth." When equality is used as a formal concept, Article 14 (1) and (2) are relevant.

India has had a long history of being socially stratified, with the lower strata living in poverty-stricken conditions. The caste system is also prevalent, with certain castes considered superior to others. There has been widespread discrimination against women and minorities in India for over a thousand years. The National Human Rights Commission recently expressed their concerns about the treatment of Dalit's and Adivasis (The Scheduled Castes). There have been protests across the country demanding social justice for those who have suffered at the hands of upper class Hindus for thousands of years. It seems that there will be protests until something changes in India- until Indian society is more inclusive than ever before. But what does society look like? And, who are the oppressors and the oppressed?

India has a population of over 1.2 billion people, making it one of the most populous countries in the world. From our government to our citizens, India is a complex country with many different cultures and traditions. In recent decades there has been an explosion of western culture into all aspects of Indian life; however there are some aspects that have remained unchanged for centuries-Indians have always had a strong cultural tradition concerning social hierarchy and discrimination against other groups based on caste or gender. India has a Hindu dominant government and society, where the majority of the population is Hindu. This poses a problem for the many social and religious minorities that live in India, who practice a religion other than Hinduism. This means that many of these groups are discriminated against by the majority as well as being forced to live in separate areas within Indian cities.

Although India is dominated by Hindus, there are several other religions present; Buddhists, Muslims and Christians all live in different regions of the country based on their views about the afterlife. These groups of people can be discriminated against because they are not viewed as belonging to one religion-they are treated like second

class citizens. Some of the religions that are commonly found in India are Hinduism, Buddhism, Jainism and Sikhism. There are approximately two million Muslims living in India. Muslims have been forced to live separate from the rest of society, regardless if they are rich or poor. Social discrimination has been a problem for Muslims who have had to wear different clothing from the rest of society or live in secluded areas because they feel unsafe in some areas.

### 103<sup>RD</sup> AMENDEMENT ACT'2019

The new reservation act was introduced by legislature named as a 103<sup>rd</sup> constitutional amendment act'2019. In this amendment it introduces a 10% reservation to the economic weaker section of society it also known as a EWS. They also provide reservations to weaker sections in public employment and admissions in public and private institutions of education. Before this new amendment there is a 50% limit on reservations. In this 22.5% seats are reserved for scheduled castes and scheduled tribes in this 7.5% for scheduled tribes and 15% for scheduled castes. In this 27% of seats reservation given to other backward classes OBC. Total reservation given before this 103<sup>rd</sup> amendment is 49.5% and now this conforms with the rule and now limit of reservation extended to 50%. It provides 10% reservation in addition to present reservation. Now total reservation is about to 60%, which is higher than the existing rule of 50% limit of reservation. As Dr. Gopal said that the reservations which are already existed before this new amendment that was not based on a caste identity, but it was based on social and educational backwardness of weaker society and lack of representation. However this new amendment in effect and it states the backward classes which are not entitled to EWS quota and this same is available for the poor among the forward classes.

<sup>1</sup>In Kumara v. State of Kerala case, it was said that the all classes are entitled for socially and educationally backward classes. This is not understood in country then he also added and pointed in several states that several of Brahmins communities who are victims of

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<sup>1</sup> Kumara vs. State of Kerala on 11 January, 1998

social discrimination that have been given benefits under OBC reservation,he also states that reservation under Article 15(4)and Article 15(5)theses sections are for all castes which are from socially and educationally backward,The article 15(6),it hjas been added to 103<sup>rd</sup> amendment ,it states that this is not covered under Scheduled caste and scheduled tribes and socially educationally backward classes for reservation.If this was really economic reservation,it would be given to the poor people irrespective castes,but it was not done.

<sup>2</sup>The supreme court in the case of MR.balaji v. state of mysore ,In this case it would not possible to predict and exact permissible percentage of reservation it can be states that in general and broad way is to be less than 50% it how much less than 50%it could be depend on the relevant prevails in circumstances of each case.in this caste of a person cannot bw a criteria for sole and particular caste is backward or not it determinants such as poverty,occupation ,and it is relevant to be taken into consideration .the court says it does not mean if one caste considers then the backward it will continue to backward other times.govt. gives a review to test and if it reacges and states the progress then reservation is not necessary it should be delete the class from the list of backward classes.

<sup>3</sup>In indra sawhney v. union of india case ,The supreme court held that if any other power confers by constitution by article 16(4)it must be exercised reasonabaly and 50% of limit over reservation should not to be exceeded.

#### **IV CONCLUSION:**

In India, being from a lower class category (a scheduled caste or scheduled tribe) is closely linked to intergenerational poverty. It has addressed a major social problem, while keeping within the constitutional constraints. However, there are issues inherent in the design of reservation that leads to inadequate redistribution and worsens intergenerational poverty among those who benefit from it. Intergenerational poverty is more pronounced

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<sup>2</sup> M.R. BALaji and others vs. State of mysore on 28<sup>th</sup> September, 1963 AIR 649, 1962 SCR Supl. (1) 439

<sup>3</sup> Indra Swahney Etc. vs. Union of India and others, Etc on 16 november, 1992 AIR SC 477, 1992 Supp 2 SCR 454

among the scheduled castes and tribes since the poorest Patels are likely to be from families where even grandparents were poor. This means that children and grandchildren of these families are destined for life of deprivation, with lower educational attainment as an expected outcome. The policy of reservation is poorly designed to address this problem since it is not based on need, but on a group's birth. Inequality in India is driven by the same factors that cause inequality in other countries: human capital and economic growth. Caste System in India has been a major hurdle for the society to progress and break free from poverty. The system has been beneficial but at the same time, it has also been controversial. Reservation policy has faced a lot of criticism from various individuals and organizations who question its fairness and effectiveness. The importance and respect of a person in the society was determined by his or her castes. This caused employment crisis in these sectors leading to increase in population of these communities who were economically backward. According to the National Crime Records Bureau (NCRB), around 31 percent of Indians belong to Scheduled Castes or Scheduled Tribes. In caste-based reservations, the government gives preferential treatment in education and employment opportunities to members of certain castes. Article 15(4) of the Indian Constitution states, "No person shall be entitled to receive aid from the state unless he is a citizen of India and is domiciled in India." These two requirements are upheld by Article 16: "No citizen shall be deprived of his citizenship except under authority of law." I argue that these articles mean that any person who is neither a citizen or domiciled in India should not receive preferential treatment. This means that caste based reservations might be a form of discrimination. The United Nations Declaration of Human Rights states, "No-one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. As a result, they are subjected to systematic interference with their privacy. Caste based reservations also violate one of the most fundamental principles in Western philosophy: equality. It is used as a substantive principle, in which it means no discrimination of any kind. When equality is used as a substantive concept, Article 15(4) of the Constitution is relevant. India has had a long history of being socially stratified, with the lower strata living in poverty-stricken conditions. The National Human Rights Commission recently expressed



their concerns about the treatment of Dalit's and Adivasis (The Scheduled Castes). India has a population of over 1.2 billion people, making it one of the most populous countries in the world. Some of the religions that are commonly found in India are Hinduism, Buddhism, Jainism and Sikhism. Muslims have been forced to live separate from the rest of society, regardless if they are rich or poor.

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# **A Study On Dowry System A Social Evil**

**Divya Rathore**

*School of Legal Studies and Governance, Career Point University, Kota*

## **Abstract**

*This paper is about vicarious liability on dowry. The dowry system is the evil that has murdered and disabled countless vulnerable women, forcing some to commit suicide. Dowry is the oldest social malady or sickness on the Indian subcontinent. This research paper presents an overview on dowry. It has become a terrible social disorder that is profoundly established in people's blood. Many individuals regard dowry as a symbol of social standing and self-recognition. To end this heinous social practice, the government has made a law to refrain people from taking dowry under the Act of 1961. Whatever money or property given by the bride side they should accept but it never followed. Many places we come to know that because of not doing so on the groom's side the girls are harmed in such a way that sometimes even it leads to death. Many measures should be taken to correct this. The paper gives a short and detailed summary of vicious liability. the entire research is based on secondary data which includes newspaper, blogs, article, research papers, online websites and various documents from various sources. The introduction part presents an outline about vicarious liability, the interpretation part gives a gist of the condition and finally the laws are given to elucidate the same and hence follows the condition. The paper concludes with a discussion of the implications of vicarious liability and the need for more effective enforcement of the law. The paper provides useful and relevant information on the subject and is recommended for further research. This paper can be used to educate people on the dangers of dowry and the need to eradicate it in India.*

**Keywords:** Dowry, Dowry deaths, India, Marriage, Women

## **I Introduction**

Marriage is considered to be a contract between two parties, and it involves certain obligations that both parties must fulfill. In some countries, such as India, marriage is seen as a sacred union and is celebrated with great pomp and show. In these countries, marriage is a union between two families, not just two individuals. The two families become connected through marriage, and this is seen as a sign of respect and a way to strengthen their relationship.

Marriage is not just a legal contract, but a social institution that has been in existence since ancient times. It is an important part of culture and society and is an integral part of many religions. Marriage has always been seen as a way to bring two people together, and it is seen as a way to promote peace and stability in a society. Marriage is seen as a way to create a family

unit and to bring new life into the world. Marriage is also seen as a way to show commitment and loyalty to one another. It is a way to show that two people are willing to make sacrifices for each other and to stay true to their promises. Marriage is a way to build trust and solidify relationships, and it is a way to create a bond that will last a lifetime.

It is seen as an economic burden on family of bride and also has many social implications. Dowry is considered as a taboo in many countries and is illegal in some countries, yet it is still an ongoing practice. The main reason why dowry is continued is due to the patriarchal structure of the society, where women are considered inferior to men. This has led to the belief that women have to be compensated for the expenses incurred by the family in raising her. This has created a sense of entitlement among the groom's family and has given rise to the practice of dowry. Dowry has also become a way of showing status and wealth within the family.

Apart from the social and economic implications, dowry has also been linked to violence against women. Studies have found that women who are victims of dowry-related violence are more likely to experience physical and psychological abuse.

This has led to an increase in the number of women who are victims of domestic violence and other forms of violence. In order to combat the problem of dowry, governments should implement laws that are designed to protect women from dowry-related violence. These laws should also provide legal avenues for women to seek redressal against any form of abuse.

To stop this violence, society should come together and create awareness about the demerits of dowry and the harm it can cause in a marriage. Government should also take strict action against those people who are demanding or taking dowry from the bride's family. They should also provide financial assistance and legal aid to those women who are facing harassment due to dowry. Social organizations should also work towards spreading awareness about the evils of dowry. It is also important to create an environment where people are free to talk about their experiences with dowry and its effects. This will help in reducing the prevalence of this system and create a more equitable society. The government should also introduce laws that make it illegal to demand or receive dowry. This will ensure that the practice is eliminated and people are encouraged to marry without any form of financial consideration. It is essential to end this system of dowry and create a society where marriage is based on mutual respect and understanding.

It is the responsibility of the government to take strict steps to ensure that these crimes are stopped. Laws should be formulated to make it a non-bailable offense. The punishments should be severe and the perpetrators should be brought to justice without any delay. Stringent laws should be passed to stop the practice of dowry system in our society.

The role of the society is also very important in this regard. People should come forward and make sure that no one is allowed to take undue advantage of this system. The society should also spread awareness and make sure that those who are taking advantage of this system are brought to justice. The media can also play a major role in this. It can be used to spread awareness about the evils of the dowry system and the consequences of taking advantage of it. The media can also be used to highlight the cases of those who have been victims of dowry related crimes. Finally, the government, society, and media must all come together to stop the dowry system in our society. It is an evil practice that needs to be eradicated from our society for the betterment of our future generations.

## **II Literature review:**

Drez and Sen (1995) opined that the persistence of extraordinary high levels of gender inequality and female deprivation are among India's most serious social failures.

B. Devi Prasad and E. Vijayalakshmi (1996) remarked that usually the prime motive behind the cruelty of young married women in her matrimonial home is the desire to extract maximum dowry.

Vani Prabhakar (2012) remarked that gender-based violence affects almost every society across the globe, and represents a significant impediment to development. She critically points out that in spite of all the talk and activities regarding the protection of women's human and legal rights, women are grossly denied their rights throughout the world and especially in South –East Asia.

Trivers (2000) concluded that there are many institutions in society but the most necessary institution is family because of its long-established tradition. A family institution comes into existence with marriage. Marriage is related with society to which a person belongs to that particular culture.

## **III RESEARCH METHODOLOGY**

### **Research Question:**

The researcher intends to do an exploratory investigation on the following research topic after evaluating the gaps in the existing literature review. The research question are as follows:

1. What is the collision of dowry on the society?
2. What are the root causes of dowry system?

### **Research Terminology:**

The main objective of this research is to provide basic knowledge of dowry system to the society. 1. To know the current and existing system of dowry.

2. To study the causes of dowry.
3. To give the correct education about dowry to the society.
4. To bring to an end on greediness.

### **Chapterization:**

Primary research, on the other hand, is a research process that involves collecting data from the source. Secondary research, in comparison to primary research, involves searching for existing data, statistics, and information that has already been collected and published by someone else. The sources used to gather secondary data in this study were mainly books and websites. Furthermore, the sources were identified based upon the relevancy to the topics of vicarious liability. The books used in this study were mainly related to the topic of Indian law, and the websites used were related to the topic of Indian legal and judicial system. The data collected from the sources was then analyzed and interpreted in order to answer the research questions and draw meaningful conclusions. This was done by firstly organizing the data into categories and then comparing the results from the sources. In addition, the data was also examined in order to identify any patterns, trends, or relationships that might be present. Finally, the data was used to draw conclusions and present the findings in a meaningful way. In some parts of India, the custom of dowry is still strong, which has caused great social and economic problems. Dowry is considered to be an integral part of marriage in many areas and is expected by the groom's family. In some cases, the bride's family is expected to pay a huge amount of money, which can often lead to financial strain, disputes and even violence. In addition, the practice of dowry has been associated with many other social evils like female infanticide, domestic violence, and abuse. The government of India has taken several steps to eradicate the practice of dowry, including passing the Dowry Prohibition Act in 1961. The Act prohibits the asking or giving of

dowry as consideration for a marriage. However, the practice is still prevalent in many parts of India, and the government is working to create awareness about its social and economic implications.

Despite the law, the practice of dowry has continued in parts of India and has been a source of conflict between families. To address this issue, the Indian government has implemented several measures such as stricter enforcement of the law, raising awareness about the illegality of the dowry system, and providing more economic opportunities for women. Additionally, many non-governmental organizations are working to end the dowry system by promoting gender equality and creating alternate sources of financial support for women. To bring a real change in the attitude of the people towards dowry, the government should take a number of steps. Firstly, awareness campaigns should be conducted at regular intervals to educate people about the ill-effects of dowry and the provisions of the Dowry Prohibition Act, 1961. Secondly, there should be strict punishment for those who indulge in dowry demands and provide. Thirdly, a special cell should be set up to deal with cases related to dowry and provide legal assistance to the victims. Lastly, a strict monitoring system should be established to ensure that the legislation is being implemented properly and the guilty is being punished.

In conclusion, it can be said that the Dowry Prohibition Act, 1961 is an important step in the right direction but it needs to be accompanied by a comprehensive set of measures to bring about a real change in the attitude of people towards dowry. In addition to amending the Act, to better protect women from exploitation, the government has also implemented various initiatives. The Centre for Women's Development, which was established in 1961, has been providing legal aid services to women and their family members to help them resolve dowry-related disputes. The government has also established a 'Dowry Harassment Hotline' for women to report cases of harassment. Additionally, the government has taken several steps to ensure that women are protected from dowry-related crimes. These include the introduction of fast-track courts to expedite the disposal of cases, the setting up of special cells to investigate dowry-related cases, and the creation of a toll-free helpline to provide legal and counselling services to victims. It is hoped that with the amendment of the Dowry Prohibition Act, 1961, and the implementation of various initiatives, India will be able to effectively address the issue of dowry-related violence and exploitation of women. The court further remarked that the aim of the legislature was to protect and safeguard the married woman from the cruelty of her husband or his relatives in

connection with the demand of dowry. It is the duty of the court to protect the rights of an individual and to give effect to the legislative mandate. The Supreme Court further stated that the increasing menace of dowry death is a matter of deep concern and the Courts must take a serious view of such offences and show appropriate sympathy for the victims and their families. The court also noted that the dowry system is a major cause of female infanticide, feticide and other forms of violence against women and should be eradicated immediately.

Finally, section 9 tries to make the punishment more stringent by providing for the imprisonment for a minimum period of six months. This can be extended up to five years and fine up to Rs 15,000 or the amount of the value of the dowry, whichever is more. The stringent provisions of the Dowry Prohibition Act have made it a criminal offence and it is now punishable by law. Therefore, it is necessary to take all measures to discourage and stop this malpractice of taking and demanding dowry. Therefore, it is a clear violation of the law to take possession of the articles and ornaments belonging to a bride immediately after marriage. The Supreme Court has held that any such act will amount to criminal breach of trust punishable under Section 405 of the Indian Penal Code. The punishment for this offence includes imprisonment of up to two years and a fine of up to ten thousand rupees. The committee also highlighted the fact that there was a lack of awareness of the Act among the general public as well as a lack of commitment from the police, judiciary and public prosecutors to tackle the menace of dowry-related violence. The committee recommended the setting up of specialized anti-dowry cells in police stations, greater involvement of the judiciary in anti-dowry campaigns, and greater awareness among the public about the provisions of the Act. The committee also recommended amendments to the Act to make the punishments for offences committed under the Act more stringent, including longer prison terms, heavier fines, and the seizure of assets obtained through dowry. The committee's recommendations have been implemented to some extent, such as the setting up of anti-dowry cells in police stations, the introduction of harsher punishments for offences under the Act, and greater awareness among the public about the Act. However, the enforcement of the Act remains a challenge and more needs to be done to ensure that perpetrators of dowry-related violence are brought to justice.

Dinesh Seth vs state of N.C.T. of Delhi on 18 august, 2008

backdrop of growing menace of dowry related cases in which the women were subjected to cruelty and harassment and were ... deal with cases involving dowry deaths occurring within seven years of marriage. Sub-section (1) of Section 304B IPC lays

Supreme Court of India

Nidhan Biswas And Ors. vs State of Tripura on 31 March, 2006

materials are collected to make it a prima facie case of any offence, a regular investigation was to follow even ... therefore, insistence on such direct evidence in dowry related cases would lead to miscarriage of justice.

Guwahati High Court

Sangita Devi And Anr vs The State of Jharkhand And Anr on 4 July, 2014

before arresting accused persons allegedly involved in dowry related cases, the police should collect materials implicating the accused however ... crimes related to dowry cases.

Jharkhand High court

Smt.Sunita Goyal & Ors vs State of Punjab & Anr on 21 February, 2012

intentionally arrayed her husband Mahavir Goyal in a dowry related case in the array of the accused. According ... lodged the false criminal case against them (intentionally excluding her husband in dowry related matter) veraciously and maliciously in order

Punjab-Haryana High Court

#### **IV Conclusion:**

Firstly, the basic education should be given to daughters about their safety. parents should educate their daughters and son's. Parents should encourage their daughter to build their own career and do not fully dependent on their husband. there should be no discrimination between girl and a boy. They should be treated equally on every basis. Girls should have the knowledge of good and bad stuff for their own safety. There should be dowry awareness program for educated and uneducated people. Basic classes and lectures should be given from school to college. there should be severe punishment for such crimes. Women should know their basic rights. They should know what's wrong and what's right for their benefits. They should not tolerate such type of crucial behavior from anyone. women should be connected to a type of WhatsApp group related to NGOs like self-employed women's Association, Azad foundation, Khushi foundation by which they will be aware of their rights and can take exact reaction on the time of cruelty. The time span of punishment for such crime should be increased to 10 years and



punishment should be given on the number of crimes they have committed. If a woman is not alive because of them then they should be imprisoned for rest of their life or should be hanged to death.

The government should launch campaigns and programmes to create awareness about the consequences of dowry death and the ill effects it has on the social fabric of the nation. It should also provide counselling services to the victims of dowry death and their families. The government should also provide financial assistance to the victims and their families. The government should also strengthen the legal system in order to ensure that the perpetrators are brought to justice. The government should also take proactive steps to ensure that the laws regarding dowry deaths are strictly enforced. In addition, the government should also take steps to ensure that the women are provided with adequate employment opportunities and are given equal opportunities and rights.

Furthermore, the government should also provide financial assistance and other support to the victims and their families. The government should also launch awareness campaigns and provide legal aid to the victims. The government should also create a more conducive environment for women so that they can come forward and speak out against the injustice done to them. Finally, the government should take stringent measures against perpetrators of dowry death and ensure that justice is served.

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## **Does morality affect the right to protection of live-in couples?**

**Mantasha Khan<sup>1</sup>, Shailesh Sharma<sup>2</sup>**

<sup>1,2</sup> School of Legal Studies and Governance, Career Point University, Kota

**Abstract:** In India, marriage is considered sacred and a holy association that holds great social value in the minds of people. But a society is vulnerable to changes and hence the concept of live-in relationship is prevailing. A Live-in relationship is a relationship between two people who lives as a couple without getting married to each other in a legal way. Such relationships have not received the consent of major part of the Indian society and this unacceptance has dire consequences on those who are in such relationships. As no legislation, rules, or customs are there that regulates this relationship in India, the Indian judiciary has taken the responsibility of regulating these relationships. This paper deals with the rights of a live-in couple and whether they have a right to protection when their lives are being threatened by their parents and relatives and what are the conditions where they are not entitled to protection to be granted by the courts.

*Key Words: marriage, live-in, right to protection*

### **I. INTRODUCTION**

Country like India gives grave importance to morals and social values but it is a fact that society is dynamic and with advent of time, social aspects like marriage, relationships, family structure also changes. People have now started adopting an alternative to marriage i.e., cohabitation without entering into a wedlock which is known as a 'live-in relationship'. Marriage, being considered as sacred, is accepted legally as well as socially unlike live-in relationships. The concept of live-in relationships is not accepted generally by the older generations as they believe it to be immoral and against the social norms. This social acceptance leads to opposition by the family, relatives etc. in the form of threats to the lives of live-in couple and causing physical harm to them. But each and every citizen of India is entitled to the right to protection of life and personal liberty and the live-in couple are also the citizens of India. "Continuous cohabitation for a significant period of time, between partners who are not legally married to each other and are sharing a common household," is one definition of a live-in relationship.<sup>1</sup> The judiciary have also laid down some guidelines to recognize a relationship as 'live-in'. In the landmark case of Indra Sharma vs. V.K.V. Sharma 2013 (14) SCALE 448<sup>2</sup>, the Hon'ble Supreme Court laid down some guidelines for a live-in relationship to

be recognized ‘in the nature of marriage’ under the Protection of Women against Domestic Violence Act, 2005:

1. A reasonable amount of time that the man and woman were together.
2. They both live in the same household.
3. The pooling of assets and funds through joint ownership, joint accounts, etc. to live as a single unit.
4. Domestic arrangements and the division of household duties.
5. Relationships that are intimate and sexually intimate are not just for pleasure but also for emotional and intimate support.
6. Raising and educating children collectively.
7. Socializing and interacting with the general public as a married couple.
8. Intention and behavior of both parties that reflect their shared objectives for a distant future.

Those live-in couple who does not satisfy or fulfill the above mentioned conditions are not recognized by the judiciary to be in a live-in relationship.

## **II. LITERATURE REVIEW**

### **How Does the Law Protect People in Live- in Relationships?**

In this article, author Ananya Singh talks about the protection of women in a relationship when they are abused and abandoned by their partners. Even though live-in relationships are legal, they are still denied of their rights due to societal view of it being immoral. Live-in relationships are regulated by various interpretations of law rather than single legislation.

### **Can ‘Right To Life’ Be Denied To Married Individuals In A Live-In Relationship?**

Author Vidhan Malik and Saurav Gupta observed that the fundamental right to which every member of society is entitled is the right to live in peace and safety. Even while live-in relationships between people who are already married cannot be given the same status as a marriage institution, they must nevertheless be given the right to life protection.

## **III. RESEARCH METHODOLOGY**

## **Research Question**

1. Whether a live-in couple is entitled to the right to protection or not and is it fair in the eyes of the law to deny protection to the live-in couple just because the concept is not accepted by the society yet and is considered immoral?
2. All such live-in couples whether legal or illegal are entitled to protection or not?

## **Research Terminology**

With regard to right to protection, the Indian Constitution provides under Article 21 that ‘No person shall be deprived of his life or personal liberty except according to the procedure established by law’ and the apex court has held that, ‘a living relationship comes under the ambit of right of life under Article 21 of the Constitution of India.’<sup>3</sup>. Thus, restriction on pre-marital sex and live-in relationship violates Article 21 of the Indian Constitution and also the right to privacy which comes under the scope of Article 21. It can also be said that, if any threat to life or physical harm is given to the live-in couple by their relatives, families etc., it would violate their right provided under Article 21 of the Indian Constitution.

In this research, the researcher has mainly opted for doctrinal research methodology and the sources are collected beneath through secondary data.

## **Chapterisation**

### **Social Acceptance Of Live-In Relationship In India**

Live-in relationships are considered as a taboo since British era that is why adopting such relationships causes trouble to live-in couples from those who believes that marriage hold a great religious value and is considered as religious sacrament in Hindu mythology. People believe that such live-in relationships does not fulfill the purpose of marriage and free one from responsibilities and parents, family, etc. and relatives continue to live in denial of the idea of live-in relationships due to this mind set. But with globalization in all aspects, Indians have also started accepting and adopting the western culture and have developed an understanding behind the reason of entering into a live-in relationship which are to check compatibility of each other in order to avoid divorce, to avoid financial responsibilities, to exempt from statutory obligations unlike marriage, to avoid social pressure. But still, some people, mostly in rural areas, have not accepted this

idea at all and continue to oppose it by threatening lives of live-in couples and in order to protect these couples from such threats, the judiciary and the legislature must take a step forward.

### Live-In Relationship And The Indian Law

The terms 'live-in relationship' and 'live-in couple' has been defined nowhere in the Indian law and as a result no rights and obligations have been defined for such live-in couples in any statute or law. The absence of any law to regulate the live-in relationships is also one of the reasons why people oppose such relationships and threaten live-in couples. Although the status of live-in relationship is not clear under any law but there are some legislations which grants some rights so that such relationships cannot be abused by the partners. Some of these legislations are:

1. Protection of Women from Domestic Violence Act, 2005- It protects the female in a live-in relationship 'in the nature of marriage' from abuse by her partner.
2. Code of Criminal Procedure, 1973- It provides privileges to a female under Section 125 who was in a live-relationship and is being abandoned by her partner at his will.
3. Indian Evidence Act, 1872- The court may assume the existence of any truth that it believes is likely to have occurred while taking into account the usual progression of natural events, human behavior, and public and private business in relation to the specific facts of the case. As a result, where a man and a woman live separately for an extended period of time as a pair, marriage is assumed.<sup>4</sup>

### Individual Rights Vs. Public Morality

The extent to which public morality affects an individual's rights which are guaranteed by the Constitution of India is an important factor to be considered. The decriminalization of Section 377 of the Indian Penal Code, 1860 in the case of Naz Foundation vs. Govt. of NCT of Delhi, WP(C) No. 7455/20015, made distinction between public morality and constitutional morality. "Enforcing public morality does not amount to a 'compelling state interest' to justify invasion of the zone of privacy of adult homosexuals engaging in consensual sex in private without intending to harm each other or others," the court said.

Popular morality or widespread disapproval of specific behaviors cannot be used as justification for restricting Article 21's fundamental rights. Popular morality is based on changeable and arbitrary ideas of right and evil, as opposed to a constitutional morality established from constitutional values. It must be

"constitutional" morality rather than popular morality if any kind of "morality" may survive the test of compelling state interest.

Thus, where it comes a question of fundamental right of an individual, constitutional morality must be upheld.

## JUDICIARY ON GRANT OF PROTECTION TO LIVE-IN COUPLES

### **A. High Court on Grant of Protection to live-in couple**

The **High Courts** have identified the right to protection of live-in couples in various petitions filed, except in some cases. A while ago, the Punjab and Haryana High Court had granted protection to a live-in couple and observed that, 'It would be a travesty of justice in case protection is denied to persons who have opted to reside together without the sanctity of marriage and such persons have to face dire consequences at the hands of persons from whom protection is sought. In the event that such a course of action is taken and protection is refused, the courts would also be failing in their responsibility to provide its citizens with a right to their life and liberty as guaranteed by Article 21 of the Indian Constitution and to defend the Rule of law. The court also expressed its view on the denial of protection by the coordinate benches and said that it cannot adopt the same view.

The coordinate benches of High Court while dismissing petitions of protection to live-in couples has stated that:

- Their live-in relationship is ethically and socially unacceptable, and the petition asks for approval of it, thus no protection order can be granted. <sup>6</sup>
- In such petitions there is no actual or real existence of threat and such cases is time consuming at cost of many other cases. <sup>7</sup>

Thus, it can be observed that the reasons behind denial of protection to live-in couples by the High Court is the social unacceptance and immorality of the concept of live-in relationship. Although, this concept may be immoral but the courts should keep law and morality apart from each other and deal with such cases accordingly. Thereby, denial of protection merely on the ground of immorality is not a valid ground. Also, the High Court of Punjab and Haryana has held that the 'social acceptance of live-in relationships is on the increase'. <sup>8</sup>

### **B. Protection to inter caste couple vs. Protection to live-in couple**

People who marry in different caste also faces the same threat as of a live-in couple because an inter faith or inter caste marriage is also not accepted socially by the society and the inter caste couple also receives threats of life by their parents and relatives who does not accept their marriage. It was high time, however, "society learns to accept inter-caste and inter-faith marriages," the Supreme Court said in granting protection to the inter-caste couple. Parents rejecting their offspring just because they choose to wed someone outside of their caste or tribe would "hardly be a desirable social exercise," the article continued. The court placed additional emphasis on training and counseling for police officers on how to deal with inter-caste marriage cases. The court stated that although society and parents may see educated young people choosing their life partner independently as a deviation, police authorities have a duty to keep such couples safe provided there is no breach.<sup>9</sup> Therefore, a similar view is required in the case of live-in relationship and people need to accept the idea of live-in relationship so that the rights of a live-in couple to live life peacefully is not exploited.

### **C. Supreme Court on grant of protection to live-in couple**

Many couples approach the Honourable Supreme Court after feeling offended by the High Court's rulings. Recently, the apex court had ordered the Punjab police to grant protection to a live-in couple whose plea was dismissed by the High Court and the Hon'ble Court stated that, 'Needless to state that since it concerns life and liberty, the superintendent of police is required to act expeditiously in accordance with law, including the grant of any protection to the petitioners in view of the apprehensions/ threats, uninfluenced by the observations of the high court.'<sup>10</sup>

The Supreme Court stressed the value of choice in choosing a spouse in the case of *Shakti Vahini v. Union of India* (2018) 7 SCC 192 11<sup>11</sup>, which dealt with the "honor killings," and declared that courts must protect young couples and families trying to flee such violence.

Therefore, the aforementioned views of the Supreme Court indicates that the live-in couples have a right to protection regardless of morality or social acceptance of the concept.

### **When Courts Can Deny Them Protection?**

Some people enter into a live-in relationship that have legal recognition but some of such relationships are not considered legal by the Indian judiciary. This illegal relationship gave rise to a ground for courts to not grant protection to the live-in couples.



A live-in couple was denied protection by the Allahabad High Court since the woman was already married. "Can we grant protection to those who want to engage in what might be considered an act that is contrary to the requirements of the Hindu Marriage Act?" the court asked. In accordance with the provisions of the law that apply to them, a person may use their own liberty under Article 21 of the Indian Constitution. A married person and an unmarried person living together is not permitted, according to the Rajasthan High Court.<sup>12</sup>

Therefore, courts have denied protection to those live-in couple in which one is married and has not been divorced legally because such relationships promote illegality in the society and it is also against the Hindu Marriage Act for a married person to enter into a live-in relationship with another until his/her first marriage is terminated. There is no doubt as to the illegality of such type of relationships but the question here is not that, whether a live-in relationship is illegal or not but it revolves around whether every person who enters in a live-in relationship is entitled to protection or not.

The fact that a live-in relationship is an illegal one should not impact the live-in couples' right to protection. In India, the whole criminal jurisprudence provides various rights to every criminal or accused under the Constitution of India and other criminal laws. The objective behind providing various rights to a criminal is the 'presumption of innocence of an accused until proven guilty'. Until and unless an accused is proven guilty, he must not be denied of his basic fundamental rights as it is believed that hundreds may go unpunished but an innocent must not be punished.

Even a prisoner is provided with the right to live with human dignity as it has been held in the case of State of Andhra Pradesh v. Challa Ramakrishna Reddy, Therefore, when a prisoner is provided with such rights, a live-in couple cannot be deprived of their right to life and right to protection only by the reason that they enter into an illegal live-in relationship and are considered as offenders. Even if such relationship is illegal, people opposing such relationship must not take law in hand and punish the couple by depriving them of their lives and physically abusing them. It is the duty of the judiciary to grant them protection to protect their lives as people can also take help of the law to punish such couples instead of punishing them themselves.

#### **IV. CONCLUSION**

The idea of live-in relationship is an idea of western culture and the Indians tend not to adopt the western culture because of their religious and moral values. Thereby, the consequences are to be faced by the live-in

couples but as citizens of India, they are entitled to the right to protection of life and the judiciary has played a great role in recognizing and granting the rights to live-in couple. If they are denied of their rights, it will harm the democratic set-up of the country. Denial of protection only on the ground of immorality is not a valid and fair ground and just because a person is doing an immoral act, it doesn't mean that he/she does not have a right to live or even if a live-in relationship is illegal in the eyes of law, the live-in couple still cannot be denied their right to life and protection. Thus, in a live-in relationship, whether illegal or legal, immoral or moral, a live-in couple is entitled to right to protection. However, despite of recognition by the judiciary, there is still hatred in minds of people regarding the concept of live-in relationship. Thus, along with the judiciary, the Indian legislature should also recognize this concept and statutory rights and obligations of live-in couple should be enshrined in the Indian statutes or law so that people will start adopting this concept and no violation of rights of live-in couple shall take place.

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## **Study and Analysis of Domestic Violence against Women: Causes & Prevention**

**Lakshya Jain**

*School of Legal Studies and Governance, Career Point University, Kota*

Email - [Jlakshya87@gmail.com](mailto:Jlakshya87@gmail.com)

**ABSTRACT:** *The greatest tragedy in our country is the grave injustice done to a woman who has been the foundation stone of family and society in general, who gives birth to life, shapes it, and strengthens it, who is a transmitter of tradition and an instrument through which culture is preserved and passed down from generation to generation. Domestic abuse affects women of all ages, colours, castes, social, economic, and political statuses. In Indian society, her frailty reveals itself in a variety of ways. A woman's hidden sorrows make her an easy target for male dominance, which is supported by patriarchy.*

*Domestic violence against women is well-known and prevalent in India. Domestic violence against women is defined as a condition that is encouraged and maintained by gender norms and attitudes that place women in a subordinate position to men. This study condemns the prevalence of domestic violence among Indian women. A schedule of interviews was created to estimate the prevalence of domestic violence. The study found that spouses' drunkenness is a major factor of domestic violence against women. Domestic abuse is still prevalent in Indian society, and women are generally unaware of the laws and organisations dealing with domestic violence.*

**Keywords:** *tragedy, domestic violence, encouraged, interviews*

### **I INTRODUCTION**

Domestic violence is defined as harming or injuring or endangering the aggrieved person's health, safety, life, limb, or well-being, whether mental or physical, or threatening to do so, and includes causing physical abuse, sexual abuse, verbal and emotional abuse, and economic abuse.

It recognises a woman's right to live in a household free of violence. Domestic abuse is defined as a violation of human rights under the Act. To implement this right, the Act recognises a woman's right to residence as well as her legal ability to request protective orders.

Throughout recorded history, practically every society and civilisation has documented domestic violence. Discrimination and oppression that culminates in physical, mental, or emotional violence have long been accepted in patriarchal communities (Privilege is related to power. Males have several advantages that women do not have under a society where men have more power than women). Except in rare cases, violence has been socially and legally sanctioned. Certain key statutes and regulations offer historical context for the idea of domestic abuse to become known. Male domination and presenting women as 'property,' an item belonging to males, and secondly expectations from women as an ideal 'role model,' fit each other, leaving her

defenceless and open to discrimination, persecution, and a variety of victimisation, so imposing their surrender.

"Violence against women may be a symptom of historically unequal power relations between men and women, which have led in men's control over and discrimination against women, moreover as women's complete advancement". Force is defined as physical, sexual, or psychological abuse directed towards one's spouse, partner, or other loved one living within the same household. Force happens when one friend, partner, or ex-partner seeks to physically or psychologically dominate or hurt the opposite. Violence happens across all cultures, and folks of all colours, ethnicities, and religions are abusers. Intimate partner violence and sexual violence against women are important public health issues and abuses of women's rights.

In the 1970s, revolutionaries recognised the widespread prevalence of wife bashing and declared that all classes of men abused their wives, not only working-class husbands. They classified wife battering as one of the hazardous male attempts to dominate women, and argued that rape was a violent crime, not a sexual one. Accommodations were founded by feminists. Where women may seek safety, demanded that the police do more to protect women, and advocated in court for abused women.

Domestic violence was once considered to be a legal means for husbands to 'teach' their wives. Simultaneously, male aggression modelled issues for patriarchy, which is defined as husbands' and fathers' power over wives and kids (a specific type of male dominance). If the husband killed or severely harmed the lady, the family's integrity would be jeopardised. Wives were equally concerned with keeping them safe from harm.

Furthermore, violence jeopardised the notion that marriage was founded on love, or at the very least companionship and company.

## **II REVIEW OF LITERATURE**

According to the author of the book 'Beyond Closed Doors- Domestic Violence in India,' being abused, used, and raped by someone as personal as a spouse is the most demeaning experience for a woman.

Suresh Goel, in his book 'Psychological Aspects of Domestic Violence,' defines DV as a coercive attitude towards another person by different means such as intimidation, threatening, and harassing of the victim.

The author of the book 'Battered Women: Implications for Social Transformation' uses the word 'battered' to describe the situation of women who have been victims of domestic abuse.

### **III RESEARCH OBJECTIVE**

To learn more about the prevalence, characteristics, and causes of domestic violence against adult and young females.

To learn about female attitudes of dealing with violent acts.

To find out the ways how women's overcome from domestic violence.

### **IV RESEARCH QUESTION**

Is the Protection of Womens from Domestic Violence Act 2005 is sufficient for womens in reducuog of domestic violence?

What are the punishments given for domestic violence against women?

### **V RESEARCH METHODOLOGY**

The qualitative research methodology used in the research study is based on secondary sources. Secondary sources of information include internet resources, research papers, publications based on the Indian legal code, reports issued by prominent authorities, newspapers, legal databases that aid in the interpretation of various instances, and so on.

This act protects the women from violence and provide the production on women's right which are provided by the constitution. In present time if any woman who is facing cruelty by her husband and relatives it is consider as a crime under section 498A of IPC 1860. Article 14 15 21 of our constitution also provides protection to the women's right which can be suffer from domestic violence. The domestic violence includes harms or injuries to life, health, limb whether physical or mental abuse, sexual abuse, economic and verbal and emotional abuse.

In the case of Inder Raj Malik v. Sunita Malik (1986)<sup>1</sup> It was held that complain was filed by Sunita who married to inder Raj Malik .the reason of complain was Sunita was ill treated , misuse ,keep hungry or treat badly by her husband and other family members mainly at the time of the festivals because of the order to receive money from her family side. Due to this she has to face physical and mental abuse by all family members and also infaint but there is no provision for treatment and not bring her to doctor. She was also received threatening to kill her brother and for not sold land to give them money.

Delhi High Court gives the judgement in the favour of lady and all family members being guilty of dowry laws. Domestic violence also done by husband and family members so it again also a term in section 498A of IPC and Section 4 of dowry prohibition act the 1956. Offenders provide punishment under Section 4 of dowry prohibition for demand dowry as well as in section 498A of IPC for cruelty against women.

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<sup>1</sup>1986(2) crimes 435, 1986 RLR 220

Salient features of act.

The main motive of the act is to protect the right of women against abuser with whom she leave it together marriage or a relationship in nature of marriage ,in addition with family members who are living as joint family. Another reason for domestic violence is a dowry demand by their family members.

Punishment for domestic violence

According to Section 313 to 316 of IPC female abortion must be considered as a total illegal or unlawful practices which means powerful ending the Pregnancy of women.

There are many laws and order also made for the protection of the rights of women's against domestic violence, by the section 304b of IPC which is related to dowry death.

There is also a section 31 of Protection Of Women From Domestic Violence Act 2005 which is "penalty for breach of protection order by respondent". This Magistrate may also file charges under Section 498A of the IPC, which protects women from cruelty and criminal conduct.

To justify this statement there is a case of Rupali devi V. state of UP<sup>2</sup> in this the respondent and petitioner were married in December 1997 at the time of marriage all the demands related to the dowry was fulfilled but after some time husband feel unsatisfied by dowry and a start treating badly or harassing and create a new demand for rupees 2 lakh and a car. The Supreme Court pass an order to provide shelter to women after threw out the from husband's house and husband being a guilty of cruelty under section 498A of IPC.

## **VI REASONS OF DOMESTIC VIOLENCE**

Poverty and unemployment: in present era poverty and payment becomes the main reason for the domestic violence .people that are facing financial crisis and more likely include in domestic violence. homeless women and children have to face domestic violence in the various way they are also threw out from their houses because of poverty, they become the burden and livelihood in less and they can't handle their expenses and unable to fulfill their needs and wants. They didn't have any source to reach the legal help or able to afford their personal resident.

Young parent: the person who become parent in young age they didn't have any experience that how to run family or leave together peacefully. They are full up with the anger, frustration, aggression and depression, anxiety and many more. Young parents also not have any knowledge that how treats children and women and how to behave or live in society. They always want to live with their own Desire or stay single also facing/ struggling the economical or financial problems and also have no standard of education.

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<sup>2</sup> Criminal Appeal No. 71 of 2012

Education: there is a significant role of education on the domestic violence it a create a large amount of a variations in the causing in family violence. School and college and all educational institutions are also creating and spreading awareness regarding domestic violence and knowledge about unwanted or unnatural sex or difference between good touch and bad touch. In the earlier time period women had low level of education so they get easily abuse but at present time they have some Secondary Education so they decrease the chance of violence. This is only possible due to fully educated women who know about her good or bad and can also see the equality regarding abusers and keep herself safe from family violence.

Relationship retention behaviour: some of the partners are the thinking that if they wanted to secure their relation, so they have to do domestic violence they consider it is only way to maintain marriage or a restraint the partner to go. if any mishappening or threat come in relationship or fear that a partner will left so they are motivate for doing these type of practices but sometime or in present era, these types of strategies are not reasons to retain relation but also cause of separation of marriage or divorce .

Cultural factors : it is commonly seen in today's era that people from different culture are decided to stay together and change their relationship into proper legal marriage which is full filled by all culture but a we can't say that a both partners are fully familiaries or having knowledge about their different culture. in starting they thought that are different culture relationship can work for long time or they thought that they are a new generation or different point of view to watch things but in it also cause or domestic violence after sometime example: in some culture the consumption of beer, wine or alcohol, smoking or eating non-veg is normal but some culture didn't like.

Historical factor: in our Indian society or in our culture we have male dominating society or always provide preference or priority to male against female. if there was a question arise that a between male or female that who is the right so it is easily answerable that a male is always right male can't be wrong, if they do domestic violence it is also right. Historical factor also a great cause of domestic violence.

Suspicion of unfaithfulness: the marital relationship is only depending on the trust and Faith. if any partner feel and insecure or over possessive and receiving some hint that he /she cheated on themselves and question is arise regarding trust or faith and seems that level of trust on partner become decrease so it will leads the reason of domestic violence .

## **VII ROLE OF GOVERNMENT**

Our Indian government gives topmost priority to the safety of women. Safety of women can't be ignored, first preference must be given to it.



For this Purpose the government made some organisation that focuses on women safety that are the ministry of women's child development and the ministry of home affairs. The ministry of a woman and child development by this introduced many policies which are beneficial for the women and they are easily accessible like "one stop Centre for those women who are facing domestic violence. The government also established non-lapsable nirbhya fund, which aims to provide financial help or aid towards increment of the women safety against violence. Mahila police volunteers' and 'universalisation of the women helpline.

By the Use of technologies there is a great development for the tracking offences related to the women like for tracking the sexual harassment of a woman a system as a launched name "investigation tracking system for sexual offences" whose role is to monitor or track the sexual assault case.

There are certain initiatives which are set a down by government, stable funding the government rise the nearly £40 million stable funding for reducing the domestic violence and provide them support

Domestic homicide reviews has released a fund of amount £150000 where main aim is to protect the women from the domestic violence who are residing in the rural or village areas.

Some new type of offences is seen in present era of forced marriage of women with means a marriage is done forcefully without their will. On 12 July 2012 launch a summer campaign and also making three short films and the provide screening which can be easily recognizable by women.

Some more initiatives are also taken by government whose aim is to diminish the amount of rape and sexual abuse of teenagers. In backward area mostly teenagers are depicted as the sexual object. A helpline number also invented that is emergency response support system. Through this, when violence is occurring women can call on 112 which automatically traces the location from where call is operated and help is a thus provided to women.

Government established some laws regarding domestic violence .the sexual harassment of a woman at a workplace act which is the helpful in the reducing the chance of a physically abuse women at the time of employment or a place where they work .There is also an act and the protection of a woman from the domestic violence act 2005 which is a helpful for protecting women from the family or a domestic violence .the main reason of domestic violence is dowry because,if married women or the women are about to marry doesn't fulfill the demand of dowry than domestic violence is practice upon them,due to the above reason ,dowry prohibition act is established.

## VIII TYPES OF DOMESTIC VIOLENCE

Emotional violence :

When someone says or does something that is emotionally violent, it is done to make someone feel useless or stupid.

Cultural violence :

Cultural violence is that when someone is hurt for practicing her religion or custom that fall under the society.

Physical violence :

Physical violence is the deliberate use of physical force that has the goal to damage, injury, any kind of disability, or even result in death of that person. This includes scratching, pushing, biting, punching, slapping, burning, hitting, shaking, use of weapon, use of one's body against another person.

There is a case for this Arnesh Kumar v. state of Bihar and another 2014<sup>3</sup> the parties of case arnesh Kumar and Shweta Kiran were married on July 1 2007. Sweta Kiran who was the suffered from her family members who are making some demands to her in the name of dowry demands,some demands are done by them for the costly things like brand new Maruti car which cost lump-sum amount of 8 lakh rupees and big or new smart or Android television or air conditioner ,but these demands are done without the knowledge of arnesh Kumar when he came to know he also go in the favour of her mother and threatening Shweta that he may Marry with the someone else if she not bring or full will this demand and she also pull out from house .the high court reject his appeal and Supreme Court for special leave and consider all the matter of facts and release and interim order and give punishment by section 498A is a cognizable and non- bailable offence and police arrest husband and relatives under this provision .

Psychological violence :

It is also referred as mental abuse, it used with the intent to harm another person mentally, or to make control over the person.

Sexual violence :

Sexual violence involves a sexual act being attempted or done without the free consent of the victim to with such act is done. This type of violence also create physical harm to another person.

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<sup>3</sup> CRIMINAL APPEAL NO. 1277 OF 2014 (SPECIAL LEAVE PETITION (CRL.) No.9127 of 2013)

Spiritual violence :

Spiritual (or religious) violence happens when someone tries to manipulate, dominates, or controls another person based on their spiritual convictions.

Financial abuse ;

Financial abuse happens when somebody controls or misuses an individual's financial resources without the individual's consent, or not restrict them to use money for their personal use.

Verbal abuse :

Verbal abuse happens when someone utilizes language, whether spoken or written, to injure another person.

Neglect :

Neglect happens when someone is responsible for providing care or support to another person but does not do so.

## **IX SUGGESTIONS AND CONCLUSION**

### **Suggestions**

In my opinion domestic violence against women should be control in India, and womens should get their full rights in family and society so that they don't feel incapable to do anything and for that government have to play a major role in this situation, as government have to make new policies which are beneficial for womens and must ensure that the policies they are making for womens protection are reaching to them.

### **X Conclusion**

Domestic violence is still not considered a serious criminal offence by the Indian judiciary. This is a closed-door crime that is often overlooked by neighbours and the community, as evidenced by the lack of convictions over the years. Due to convenient judicial system, offenders also took advantage of this system and continuing domestic violence. As a result, about one in every three women globally experiences physical or sexual abuse, most often at the hands of an abusive spouse. Human rights are violated when violence is directed at women and girls. Violence has a negative influence on women's overall well-being and stops women from fully participating in society. It has an impact on their families, their community, and the country as a whole. It has huge costs, from greater stress on health care to legal bills and losses in productivity.

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## Capital Punishment and its Constitutional Validity

Mayank Jain<sup>1</sup>, Jai Prakash Srivastava<sup>2</sup>

<sup>1,2</sup> School of Legal Studies and Governance, Career Point University, Kota

Email: [mayankjain7467@gmail.com](mailto:mayankjain7467@gmail.com)

**ABSTRACT :** *This research article investigates whether all punishments are justified by the same assertion that wrongdoing must be punished. The majority of religious or moral systems teach that poor behaviour has negative repercussions. The majority of the rationale for punishing wrongdoers is to deter others from committing wrong. Because of its extreme and irreversible character, its justice, appropriateness, and efficacy are more open to argument than other sanctions. Death sentence supporters regard it as a powerful deterrent to crime. They are experts in using the death penalty as a deterrent or to discourage or educate crime. They feel it provides the best possible justice to victims of horrible acts.*

*Capital punishment has long been a source of contention, not just in India but also in a number of developed countries. Under its Charter of Rights, the international organisation proclaims death punishment, or execution, to be a crime against humanity and calls on its member nations to abolish it.*

**Key Words:** *Repercussions, Horrible acts, Deterrent , Discourage , Justice , Capital Punishment , Charter of rights .*

### INTRODUCTION

Every punishment is based on the notion that there must be a repercussion for violation. There are two primary reasons for imposing the punishment. One is the idea that punishing someone who has done wrong is both right and just; the other is the idea that punishing wrongdoers deters others from acting similarly. The same premise underlies other penalties and the death penalty as well.

Under the current conditions, the discussion over the death sentence is the most globally relevant. The death penalty is an important part of the Indian criminal justice system. With the growth of the human rights movement, the existence of the death sentence in India is being questioned as immoral. Every punishment is based on the notion that there must be a repercussion for violation. There are two primary reasons for imposing the punishment. However keeping one person alive at the expense of many other people's lives is a strange argument. It is unbelievable and actually immoral for members of the society or potential victims to do such things wrong.

Execution of a person sentenced to death after being found guilty by a court of law of a criminal offence is capital punishment, commonly known as the death penalty. It is important to distinguish between the death penalty and extrajudicial killings that take place without a court order. Although the imposition of the penalty (even when it is sustained on appeal) does not necessarily result in execution, the terms "death penalty" meaning "capital punishment" are sometimes used interchangeably. This is because there is a chance that the sentence could be commuted to life in prison.

The phrase "Capital Punishment or Death Penalty" refers to the harshest type of punishment, it is the penalty for the most egregious, terrible, and abhorrent crimes committed against people. This can be provided by any type of Penal law which is used for providing punishment force in any part of the world. Capital punishment provides the legal rights or authorities to state to end up or finish the life of any person or offender. This process should be done in a legal procedure, according to section 354(5) of Code Of Criminal Procedure that When any person is sentenced to death, the sentence shall direct that he be hanged by the neck till he is dead, by fulfilling all the legal formalities because at the time period of the bruisers number of Indians are also put on hang whether before or after trial. Murderers and other violent offenders have long been subjected to the death penalty as an appropriate punishment. It works as a deterrent and a preventative measure. The argument put up in favor of the death penalty is that it is legal to take away the life of someone who takes another person's life. Accordingly, the murderer deserves to be put to death. This form of retribution is legal since it strengthens social solidarity against those who breach the law. Although the nature and severity of these offences differ from nation to nation, state to state, and age to age, the death penalty has always been the result of capital punishment. If the accused person not satisfies with the decision given by the lower court then he can appeal in higher court

The judge according to Section 235 of Code of Criminal Procedure declare the judgment. and court also has to describe that on what reasons court has made this judgment .

After giving the judgement by Lower court the person who is not satisfy can appeal in High Court than the high court look into the matter of fact in case and finalise its decision or High Court can also release its new judgement if it want the any changes and can also ask for new trial of case.

Any person who is not happy or a gave its acceptance to the decision of High court so he or she can also has another option for higher appeal in Supreme Court .

When supreme court give its judgement and someone who also not agree by the decision of the supreme court so he can filed a petition for the review of the judgment of the supreme court under the article of 137 of the Constitution within the prescribed a time period of not more than 30 days from the time of the judgement given by the supreme court.

## **HISTORICAL BACKGROUND**

The death penalty has been used for a long time. Capital punishment has been used throughout history. Individuals have been executed using the death penalty throughout history. Given the circumstances, the sentence was meted out on minor offences. The number of executions will be separated into two categories primitive and ancient. The ancient time consisted of punishing people on an arbitrary basis that was chosen by the King, and the law was oral and not at all formalised. During the primitive time, execution was granted for crimes such as murder, theft, trespass, and misappropriation of valuables. The death sentence has never been employed in any country on the planet. Throughout human history, the death penalty has never been abolished as a form of punishment.

## **REVIEW OF LITERATURE**

Thorston sellin writes that death penalty has failed to be effective even as the measures of social defence and as an instrument of retributive justice many of the condemned prisoners escape death even after the award of this sentence either because they succeed in appeal or are pardoned.

## **RESEARCH OBJECTIVE**

The main objective of this research is to identify that capital punishment or death penalty is the last option to develop fear in the society to not to commit heinous or grievous crime.

And also to study the meaning and determining the principles and to find the reason why the rarest of rare crime philosophy developed.

## **RESEARCH QUESTION**

What are the conditions for imposing the death sentence in India?

Is capital punishment still an appropriate punishment in today's society?

## **RESEARCH METHODOLOGY**

The qualitative research approach used in the research study is based on secondary sources. Secondary sources of information include internet resources, research papers, publications based on the Indian legal code, reports issued by prominent authorities, newspapers, legal databases that aid in the interpretation of various instances, and so on.

The one who commit any offence which comes under the category of heinous or grievous crime for which the punishment of life imprisonment falls short. And also comes under the category of Rarest of Rare cases.

Some of the conditions in which a person is eligible for the death penalty are given in Indian Penal Code are section 121 , section 132 , section 194 , section 195A , section 302 , section 305, section 307(2) , section 364A , section 376A , section 376D , section 376DB , section 376E .

In the present era where the rate of dreadful or terrible crimes increasing day by day, to stop all those crimes a fear of death must be develop in the mind of those persons who are going to commit these types of crime and the capital punishment is the only way to do so .

In capital punishment there is no partiality done between man and women, it is totally an indiscriminate punishment for the crimes either done by man or by women.

To justify this statement there is a case Shabnam v/s Union of India 2015<sup>1</sup>, this was the first case in the history of the judicial system that the women provided the death sentence in this case the lady made an arrangement together with her boyfriend to finish her family member because they didn't allow her to marry her boyfriend .In the madness of love she killed her all family members including her 10 month's nephew .After doing these inhuman practices the court watch all the matters of facts and gave a judgement to hang the lady or awarded the death punishment to the women for the first time .

Capital punishment also not given to minors as they are not eligible for death sentence. It was held in case of Vinay Sharma versus Union of India 2020<sup>2</sup>, this case is also known as Nirbhaya gang rape case .In this case girl was raped by 6 person because of which the girl died .They gang raped her, put the Iron Rod in her private part, they threw the girl on the roadside without her clothes and because of such horrible incident she died . There are six offender who were doing rape in which one a minor so he can't be give death penalty and other one ended his life by committing suicide in jail the court bring judgement after analysing their intention or offence that they should provide an capital punishment and they were hanged on 20 .

In the above case if those persons don't got punished for the offence they had done then it encourage public to do offence , so Capital Punishment must given to those persons who do these type of crimes.

#### CAPITAL PUNISHMENT AND ITS CONSTITUTIONAL VALIDITY:

The first case where the difficulty of constitutional validity of death sentence came before the Supreme Court was Jagmohan Singh V. State of U.P.<sup>3</sup>, Jagmohan had a bad feeling towards the Chhotey Singh because chhotey Singh was the guilty of a death of uncle of Jagmohan Singh. Chhotey Singh was accused but after sometime Court proved not guilty to Chhotey Singh. At that time both are minors, passing of many years there had been a fight between Jagmohan along

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<sup>1</sup> Writ petition (criminal) No. 89 of 2015

<sup>2</sup> Writ petition (CRL.) No. 65 of 2020

<sup>3</sup> 1973 AIR 947, 1973 SCR (2) 541



with Jagbir Singh against Chhotey Singh regarding the irrigation of field. Next day Jagmohan Singh and Jagbir Singh holding some greivous weapons like lathi and gun and attacking on Chhotey Singh and bajra field, and by these act chhotey Singh led to death. The session court release a judgement by making the Jagmohan as a guilty of Murder of Chhotey Singh, an appeal made against the order of session court and high court also confirms and the Honourable Supreme court also confirm by the special leave.

Section 302 of the Indian criminal code of 1960 (death penalty for murder) was placed on trial for constitutional validity. The majority of reasons made before the Supreme Court were that it breaches numerous fundamental rights that citizens should be guaranteed, particularly Article 14, because in two identical situations, the penalty for murder is jail and, in some cases, execution. The Supreme Court dismissed the suit, saying that the discretion of awarding execution or imprisonment declaring that physical punishment or captivity. Judges must consider the merits of the case, including the circumstances of a criminal act, and so Section 302 of the Indian penal code of 1860 was not declared unconstitutional.

In the case of Bachan Singh vs. State of Punjab<sup>4</sup>, in this Bachan Singh who was already guilty of his wife murder and received a life imprisonment during his period of punishment he release, he was residing at the house of his cousin brother name was Hukum Singh and the hukum's wife and son not like that they have to live with a Bachan Singh. After a few days, he devised a plan to murder Hukum Singh's family members. At midnight, he wanted to kill Meera bai, Hukum's sister, and attempted to kill her with an axe on her face. The entire scene was witnessed by Vidhya bai, who made every effort to stop the appellent, but her face and ear were blown by the axe, causing injuries. Later session court judge make a judgement which was fair and true and announce a sentence to death under Section 302 of Indian Penal Code for being guilty of the murder of Desa Singh, Durga bai and Veeran bai. Later he appeal to the High Court and high court dismiss the appeal and give favour to the judgement of the session court and he made further appeal in Supreme Court and by the special reason in the section 354(3) of Code Of Criminal Procedure 1973.

The topic of the constitutionality of corporal punishment was revisited by the Supreme Court's five-judge Bench, which overturned the previous verdict rendered in the Rajendra Prasad case by a majority of four justices. It stated that the execution as an alternative punishment for murder is not unreasonable and thus does not violate articles 14, 19, and 21 of the Indian Constitution, because "public order," as defined by clause (2) and (4) of Article 19 of the Indian Constitution, differs from "law and order," and also declared that the principle of imposing the capital punishment should be done only in "the rarest of rare cases" within the judgement of Justice Bhagwati, it absolutely was held that "the capital punishment isn't unconstitutional".

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<sup>4</sup> 1982 (3) SCC 24, 1983 (1) SCR 145 a

In India, there is divided opinion on the issue of physical punishment, with some favouring its continuation and others advocating its eradication. India is one in the 78 retentionist countries that have retained the authority and going to be approved only in "rarest of rare situations" and for "exceptional causes". The lawmakers or the Supreme Court have not yet clarified what constitutes the "rarest of the rare circumstances" or "exceptional causes."

### **DOCTRINE OF RAREST OF RARE:**

The meaning of this Doctrine is an "exceptionally brutal" which means the act or crime, offence can't be accepted by the society and offenders have to be punished with the death penalty. In other words basic meaning of rarest of rare case is a very few cases in which the capital punishment can be awarded but this doctrine doesn't mean a convicted person always received death penalty all the remedies and the judicial system should be considered by all legal principles . This doctrine considered that capital punishment is only Last Resort or we can say last way to reduce the exceptional brutal crime. The principal is not a type of jacket formula which can be easily apply by providing death penalty we have to consider 2 points the nature and seriousness of crime.

In *Machhi Singh v/s State of Punjab*<sup>5</sup>, on the night of 12th August 1977 Many attacks took place in the five villages of the Punjab The Attack was plan and settle by Machhi Singh who was a local man has a fighter with other person whose name is Amar Singh and his sisters Piaro bai and for taking the revenge he wanted to murder the Amar Singh and Piaro bai .through the plan which was made by the Machhi Singh For Revenge, 17 peoples were killed and after than Machhi Singh and including were arrested. after the arrest of the Machhi Singh and he all offenders who participate in crime were put on trial for murder for violating law and order five session of cases were held on Machhi Singh. The order of case was given by judge by considering all the facts and give life imprisonment to nine man and Machhi Singh and three other were given death punishment.

Some criteria as prescribed by Supreme Court for application of doctrine Rarest of the rare case as describe in this case are as follows:

when murder is a committed with the wrongful intention, very greivous in nature, extreme brutal and serious

when a person creating some type of act which can cause death of other.

when convicted person cut a body into small pieces of other person

for the intention of burning alive setting a fire on house

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<sup>5</sup> 1983 AIR 957, 1983 SCR (3) 413

One person higher a killer for setting or planning a murder of another person due to monetary reward

Murder was done for the thinking to inherit or capture the property by illegal way

When offender commits a murder of innocent child, a public renewed person, or helpless women or person by the reason of old age and infirmity.

When one person kill another person who belongs to backward class or a ruler areas due to the dowry death with also known as bride burning.

When a series of enormous crime are done for the multiple murders.

## **SUGGESTION AND CONCLUSION**

### **Suggestion**

In my opinion Capital punishment is necessary to be in the type of punishments, given to those persons who do the greivous offences. As it develop the terror of death in the mind of the offender and because of that terror perhaps he stops himself from doing the crime, and by this crime rate also decreases. Because if capital punishment is not given to anyone it motivates the public to do the crime as they don't have any type of fear which stops them in committing of crimes.

### **Conclusion:**

In ancient times, even intangible offences were punished by death. Governments gradually phased it out, but India stuck with it for one reason: the people. "An eye for an eye makes everyone blind," Mahatma Gandhi once observed. When the atrocities continue, the conditions are much more horrifying than before.

In the most extreme cases, the death sentence does not violate human rights principles as stipulated by the ICCPR (International Covenant on Civil and Political Rights) for governments that have not abolished it but have imposed specific restrictions on it.

Harsh punishment instills fear in others, stopping them from committing crimes. In India, the deterrence hypothesis is used. In the case of Macchi Singh, the Supreme Court granted the death penalty based on widespread popular demand. Human thought is always evolving. Considering the 2012 Delhi Gang Rape, every citizen of the country came together to fight Damini's terrible rape case.

This sparked a revolution and awoke the judiciary's eyes, and the criminals were condemned to death in March 2020. It is critical to recognise that the accused has legal rights as well. Only when all of the accused person's rights have been exhausted may the death penalty be applied.

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## **A Study On Indian Youth And Cyber Crime**

**Anam**

School of Legal Studies and Governance, Career Point University, Kota

**Abstract:** *“Unless and till our society acknowledges cyber bullying for what it is, struggling of lots of silent sufferers will continue.” Cyber Crime is familiar to all over the world as a crime committed by professional criminals .*

*As the usage of net has made the same old of dwelling easy and non aggressiveness nevertheless on the identical time with the improvement of the net and its correlated advantages have additionally formulated the ideology of cybercrimes as well. Furthermore, the improvements in Wireless era have additionally recommended the youngsters in India to get obsessed with unlawful acts.*

*Cybercrime is well-known throughout the world as a criminal offence committed via the internet .Currently , cyber offence is becoming a serious be counted of hobby all over the world.. In India, era is growing day by day via way of different means .Even our Prime Minister, Mr.NarendraModi, sees India becoming a virtual country. The primary goal of the paper is to apprehend commonplace cybercrimes and to understand about the level of focus among children, how children are impacted and victimised by means of e-crime, and how their personal identification is disrupted and stolen. The absolute method is described and organised scientifically. The gift paper is primarily based entirely on primary information, as well as secondary information and other information. Nowadays, in this cyber world, we virtual citizens, all of us, have instrumented the information available about our location and happenings to the point where privacy appears to vanish. Technologically demanding situations are inextricably linked to security-demanding situations. In a conceptual manner, this paper offers the effect and volume of Cyber Crime among children at a macro stage.*

**Keywords:** *Cyber Offences ; New generation ; Internet Security Awareness ;*

## **I INTRODUCTION**

In this day and age, email, websites, and online applications are the primary means of communication for everyone. It aids in data circulation as well as the exchange of images and other materials. It is, without a doubt, useful information, but it also exchanges undesirable information. It all starts with inventions in information technology, which raise opportunities after difficulties to our safety, security, and privacy prospects. These days, everyone is connected to one another through various means of communication, such as facebook, instagram, whatsapp, and many other social sites. Despite , every coin has two sides, and while the internet is assisting many people with communication and other means, cybercrime is also gradually increasing, and the world is currently facing critical security problems as a result of cybercrime. Cybercrime is not a new type of crime in the world. It is defined as any illegal activity that occurs on or through the medium of techniques, on any internet sites, or on any other technology recognised by the Information Technology Act. Cybercrime is the most prevalent crime, and it plays a critical role in modernised India. Criminals cause enormous losses to society and the government, but they are also capable of concealing their true identity to a large extent .The majority of crime in India is committed by illiterate criminals, but cybercrime is committed by highly skilled professionals with extensive knowledge of the technical world. In a broader sense, cybercrime includes any illegal activity in which a computer or the internet is used as a tool, a target, or both Cyber crime is most of the times judicially interpreted in some Indian court judgements, but it is not mentioned in any act or statute passed by the Indian Legislature. Cybercrime is evolving into a difficult-to-manage evil, with its roots in the misuse of modern society's growing reliance on computers. The use of the internet and other technological means has grown in our daily lives and has become a trend among the youth .Furthermore, it is shocking to see that people aged 15 to 24 years are the ones who are most involved in cyber crime as well as victims of cyber crime because India has a young population of almost 27.23% and they are also the ones who are highly active on social media platforms as a result of which they sometimes become victims as well as offenders of cyber crime. This research report will demonstrate the various aspects of cybercrime as well as how cybercrime affects India's youth.

## II Literature Review:

The cyber offenders are taking speedy internet and the convenience provided by her statements, she also concluded that it is the responsibility of every internet users to stay aware of cybercrimes and the laws related to cybercrimes. She also stated that citizens must also be aware of different kind of cybercrimes, so that they can not become victims of cybercrime.

1. The authors Parma and Patel in 2016 concluded after the survey that mostly the citizens regardless of the IT field were unable to actively maintain themselves to keep updated with the new information regarded to cyber law and computer safety. They realize that the condition could get ever crucial among the people who are not from the IT background. They suggested that fixing basics manners among individual, while spreading awareness on cyber crime in India. A same kind of report is eventually seen among the B.Ed. pupils of perambular district, Tamilnadu (Singaravelu and pillai) realized that the situation could become uncontrollable without the complete awareness of cybercrimes and they also can not become a successful teacher without the proper awareness.
2. Mehta and Singh(2013) made a similar statement in order to study the awareness of cyber laws in Indian society, and they discovered that there is a distinct difference in awareness between male and female users. They stated that in comparison with the female users, male users are more aware about the cyber crimes. However, Hasan et al; concluded on cybercrimes in Malaysia that female users are the one who are aware more than male users.
3. Moreover Letizia Paoli, Jonas Visschers Cedric Verstraete and Elke van Hellefont concluded that, there is no accurate definition of cyber crime neither in the academic sense or in the legal sense and there no specific document in the legal world as well as in the academic world related to cybercrime definition. As stated in a 2013 review of the UN Office on Drugs and Crime (UNODC, 2013), many of these statements do not even have the definition of cybercrime per se, however there are relevant laws that constitute cybercrime. Clough on September 2015 concluded that "there are many terms to define cybercrime as there are many cybercrimes taking place. Van der Hulst&Neve (2008, in Domenie, Leukfeldt, van Wilsem, Jansen &Stol, 2013: 2)

concluded that , For researchers, the deficiency of a accurate definition could be problematic. A exchanged definition would not only help describe the scope of the issue under examination, but also ease discussions among professors and provide a basis for comparing their research evidences (ENISA, 2016a: 82; Gordon & Ford, 2006: 13)

4. "When staying interior have become a mandate, overworked dad and mom assumed that retaining the youngsters and the young people busy on clever gadgets in the 4 partitions is retaining them safe. But, the immoderate intake of the net and clean accessibility to smartphones has placed them at excessive threat of cybercrime vulnerabilities," says India's pinnacle moral hacker and cyber protection expert, Mr.FalgunRathod. Puja Marwaha, CEO, CRY-Child Rights and You, stated even as spending greater time on net for gaining access to schooling and different verbal exchange purposes , children have also become more vulnerable to a number of risks, particularly in the contexts of online sexual abuse, grooming or sexual solicitation, sexting, exposure to pornography, production and distribution of infant sexual abuse material, cyber-bullying, online harassment and cyber-victimization, and numerous other privacy-related risk .

### **III Research Methodology**

Methodology is a set of rules and procedures that govern how studies are conducted and how claims for understanding are evaluated. Methodology encompasses all study techniques. The technique region of selection, populace and pattern selection, facts series strategies and techniques, and facts evaluation techniques are all discussed in methodology.

1. Cyber offences is now a global problem, and no country is immune. In 1820, the first Cyber Crime was committed in India, Japan, and China. Pornography is a major issue; under Section 67 of the Information Technology (IT) Act of 2000, creating, transmitting, and distributing cyber pornography is a crime. Surfing and viewing online pornography, on the other hand, is not always punishable. Making, dispensing, or even surfing Online Child Pornography is a crime under cyber laws. There are nearly 100,000 websites that may be providing illegal Child Pornography.



Cybercrime is a type of crime in which an internet connection or a computer is used as an instrument to commit the crime. Some of the factors that influence the decision to commit a cyber crime include the quantity of data stored in a small space, ease of access, complexity of work, negligence, and loss of evidence.

In Bhopal, a young person was arrested for being a member of a Whatsapp organisation that shared toddler pornography films. The crime division discovered many messages sent in "code word" annoying toddler pornography content material from the accused.

Some types of Cyber Crimes are noted below:

- Crackers are the people who create viruses. Only hackers investigate other people's computer devices for educational purposes. Pranksters are people who play tricks on others. Criminals who make a living from crime are considered career criminals. Harassment is cyberbullying that occurs over the internet.
- Computer spam refers to unsolicited industrial commercials distributed online via e-mail that may contain viruses and other programmes that harm computers. Restriction of cybercrime is dependent on correct evaluation of their behaviour and acceptance of their influence over various tiers of society. As a result, knowledge of Cyber Crimes in the modern era and their consequences on society, as well as future Cyber Crime trends, are explained.
- Phishing is a more serious type of cybercrime. It is simply one of the many internet scams. Phishing is a type of electronic fraud in which people are duped into disclosing non-public financial information to unauthorised parties. A phishing attack can be handled via voice e-mail, landline, or cell phone.

In Kolkata, the death of a younger 17-year-old student as a result of cyberbullying is most likely an extreme case, but cybercrime is on the rise in this city that, according to a recent TCS survey, is addicted to Facebook - an excess of 85% of young adults have an account there.

1. Mens Rea and Actus Reus Doctrine in Cyber Crime As far as traditional crime is concerned, Mens Rea and Actus Reus are the two most important factors. Actus Reus is Latin for "such a result of human behaviour that the regulation seeks to prevent."  
11. A fee or omission is required to represent a crime. As far as mensrea is concerned, it means "A responsible nation of thoughts." 12. The intellectual detail documentation

the opposing critical aspect of crime. The act remains the same even as the state of mind renders it 'reus' and thus illegal. Almost all crimes require evidence of some kind of intellectual detail. thirteen As far as cybercrime is concerned, determining mensrea is exceedingly difficult. In cybercrime, one must examine the hacker's state of mind and whether or not the hacker was aware that the access became Unauthorized. Thus, a "Specific Computer" no longer needs to be meant by the hacker; it's far sufficient if the unauthorised access turns into to "any computer".

2. According to the most recent NCRB statistics, there was a 400% increase in cybercrime instances committed against children in 2020 in comparison to 2019, with the majority of them involving the publishing or transmission of materials depicting children in sexually explicit act.

Top 5 states reporting cybercrimes in opposition to youngsters are: Uttar Pradesh (170), Karnataka (144), Maharashtra (137), Kerala (107) and Odisha (71), the National Crimes Record Bureau records stated.

As the NCRB 2020 facts reveals, there's a pointy upward push (over four hundred consistent with cent) in cyber crimes (registered beneathneath the Information Technology Act) dedicated towards kids in evaluation to the remaining year.

In 2019, 164 instances of cyber crimes towards kids had been said at the same time as in 2018, 117 instances of cyber crimes had been dedicated towards kids and seventy nine such instances had been registered in 2017. Even alevn though the quantity of cyber crime instances dedicated towards kids in 2020 continue to be small, its upward push from 2019 is alarming.

### **Research Question:**

1. What and the how much do We Know approximately Cyber Crime?
2. Is there any doctrine related to cyber crime ?
3. How much the youth is affected by cyber crime ?

### **Research Terminology**

1. The main goals of the document are to study the state of affairs of young adults at the result of cybercrime .
2. The goal is to take a look at the throughout state of affairs of cybercrime, its consequences , and grounds of cybercrime and criminal trends of cyber attack .
3. The subsequent goal is to outline how much kids are aware of cybercrime and cyber attacks .
4. The other objective is to unfold consciousness of the internet users , whether or not it's far male or females .
5. To layout many frameworks and online workshop simply to take a look at how much netizens are affected from cyber attacks .

### **Chapterization:**

This studies paintings is associated with cybercrime its consequences on youths. For beginning on this study need suitable discipline which can reaction to the query paper. Given priority on these matters purposively choose different sources for research and then I edited it as per different sources and according to my knowledge . I chose secondary sources for this study and studied many article and different sites . I analyzed all the data , graph , charts , and then carefully mended into the original work

### **Few cases to understand the impact of cybercrime in India and on Indian youth**

#### **The Sony case**

India had its first cybercrime conviction. This is the case where Sony India Private Limited filed a complaint about a website called [www.sony-sambandh.com](http://www.sony-sambandh.com) that caters to NRIs. The website enables NRIs to ship Sony products to their friends and family members in India after making an online payment. The company promises to deliver the goods to the concerned recipients. In May 2002, someone logged onto the internet web site online beneath the name Barbara Campa and ordered a Sony colour television set and a cordless phone. She requested that the product be delivered to ArifAzim in Noida and provided the number of her credit card for payment. As a result, the charge was cleared through the credit score card company and the transaction processed. Following the associated due diligence and checking

procedures, the objects were introduced to ArifAzim via the corporation. When the product was first introduced, the company took virtual photographs to represent the transport being established by ArifAzim. The transaction ended there, but after one and a half months, the credit card company informed the company that it had been an unauthorised transaction because the actual proprietor denied making the purchase. The corporation had filed a complaint with the CBI for online deception, and the CBI had registered a case under Sections 418, 419, and 420 of the IPC (Indian Penal Code). ArifAzim was arrested after the problem became investigated. Investigations revealed that ArifAzim, while working at a call centre in Noida, benefited gain access to the range of an American countrywide credit score card, which he misused at the company's website. The CBI recovered the shaded television as well as the cordless phone. The CBI had evidence to support their case in this case, so the accused admitted his guilt. The courtroom docket convicted ArifAzim under Sections 418, 419, and 420 of the IPC, making this the first time a cybercrime has been convicted. The courtroom docket felt that because the defendant was a 24-year-old boy and a first-time convict, a compassionate approach was required. As a result, the defendant was discharged from probation for a year by the courtroom docket. Sections 67 and 70 of the IT Act are also used in some cases. In this case, hackers hack one's website and replace the homepage with pornographic or defamatory content.

### **The Bank NSP Case**

One of the most notable cybercrime cases is the Bank NSP case, which is the only one in which a financial institution's control trainee became engaged to be married. The couple exchanged numerous emails regarding the use of the organization's computers. After a while, the two split up, and the female created bogus email addresses like "Indianbarassociations" and sent emails to the boy's overseas customers. She did this on the financial institution's computer. The boy's company lost a large number of customers and went to court against the bank. The financial institution was held liable for the emails sent using the financial institution's system.

### **Bazee.com case**

The CEO of Baze.com was arrested in December 2004 after a CD containing objectionable material was purchased from the website. The CD was also available for purchase in Delhi's markets.

The Mumbai Police and the Delhi Police were called in. The CEO was later released on bail. This raised the question of what distinction we should make between Internet Service Providers and Content Providers. The accused bears the burden of proving that he became the Service Provider and is no longer the Content Provider. It also raises a number of issues regarding how the police must deal with cybercrime cases.

### **Kinds of cybercrime :**

According to the research , in this report we can say there are ample number of cybercrimes present in this world . As population is increasing rapidly many different kinds of technologies are coming and with this the rate of cybercrime is elevating day by day . some of different kind of cybercrime are as follows ;

#### **1. Data manipulation**

Data manipulation is a kind of fraudulent activity where one person fraudulently and maliciously alter the data or information of a material for some type of gain or profit . In this activity the fraudulent person will alter and modify the valuable document instead of originally stealing it .

#### **2. Data theft**

The term data theft is used in different aspects sometimes data theft can be define as ,when a fraud person maliciously stole the data or document of a company or stole any research work of any individual or when a person fraudulently take out bank information using different technical tools illegally , for an instance , stoling of account number , pin number etc.

#### **3. Social interference or Network interference crime**

Nowadays everyone is uses social media apps and specially the youth are the one whos mostly involved in social media or networking sites .some social media thefts takes out personal information using illegal technical tools and then start blackmailing the victim . Sometime the fraud person takes out the password of a person`s social media app an then hack there account .

### **Law regarding cybercrime in India :**

India is a diverse country and there are various types of laws for different aspects including cyber law . Some of them are mentioned as follows :

In India, Information Technology Act , 2000 is the act in which laws regarding cyber crime is mentioned which has been enforced on October 17, 2000. The major concern of the Act is to provide legal exemption to electronic commerce and to ease filing of electronic records with the Government.

### **IV Conclusion:**

Even if no longer everyone is a victim of cybercrime, they are still at risk. Crimes committed by way of computer vary, and they don't always originate in the back of the computer, but they are completed by way of computer. The identity of the hacker ranges from 12 years old to 67 years old. The hacker ought to stay 3 continents away from its victim, and that they wouldn't even recognise they were being hacked. Crimes committed behind a computer screen are a problem in the twenty-first century. With the advancement of technology, criminals should not rob banks, nor should they be outside to commit any crime. They have everything they desire on their lap. Their guns are no longer weapons; they now attack with mouse cursors and passwords. Individuals should avoid disclosing any information about themselves in order to protect themselves from cyber stalking. This is the same as revealing your identity to strangers in public. Avoid sending any photographs online, particularly to strangers and chat buddies, as there have been incidents of image misuse. To defend against virus attacks, always use cutting-edge and up-to-date anti-virus software. Always keep backup volumes so that data loss is no longer experienced in the event of virus

corruption. Never send your credit card information to any website online or to a stranger; this isn't always secure to defend against fraud. Always keep an eye on the websites your children visit in order to avoid any type of child harassment. It is far better to use a security programme that allows you to manipulate the cookies and send all of the data back to the website online, as leaving the cookies unprotected can be fatal. Website owners should keep an eye on the traffic and their patterns on their websites. It is critical to discuss and calculate the outcomes of various other data security consciousness transport methods used in improving end users' data security consciousness and behaviour.

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# A Brief Review on Pilot Plant Scale - Up Technique for Solid Dosage Form

**Rahul Kumar Ancheria**

**Assistant Professor, School of Pharmacy, Career Point University, Kota**

**Abstract** *The pilot plant method is a way to create products on a smaller scale because it helps to identify variables that can affect large-scale production, such as equipment speed variations, procedures, personnel needs, space requirements, formula reviews, raw materials, and the creation of responsible and practical manufacturing processes. The solid dosage form pilot plant approach offers recommendations for mass industrial output. The last twenty years have seen incredible breakthroughs and improvements in pharmaceutical research, giving us the ability to produce new treatments quicker than ever before. Other pilot plants are built-in labs employing stock lab equipment. These numerous parameters, such as mixing, drying, granulation, and compression, among others, have an impact on the solid dosage form. The pharmaceutical business values pilot plants highly because they guard against batch failure and other processes.*

**Key words-** *Pilot plant, Plant, solid dosage form, drying, blending.*

## **I. INTRODUCTION-**

**1. PLANT** - A site where the five elements—matter, method, machines, money, and a person—combine to produce a good.

**2. Pilot Plant:** This is a tiny industrial facility where issues were discovered and resolved.

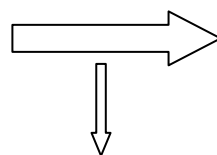
Or

When implementing a new process on a broad industrial scale, a tiny programme called a "pilot plant" is utilised to learn more about its ethics.

Or

It is the plant, connection between research laboratory to commercial scale production.

R & D Production



Pilot Plant



**Scale- up** – It means Research to developed process.

Or

Increasing the batch size is known as scale – up.

### **1.2 Difference between Laboratory scale formulations(LSF) vs. Large scale production (LSP)**

1. Batch size/volume/number of units
2. Container material
3. Equipment design
4. Processing arrangements
5. Processing speed and time
6. Operating controls e.g. Temperature and Humidity

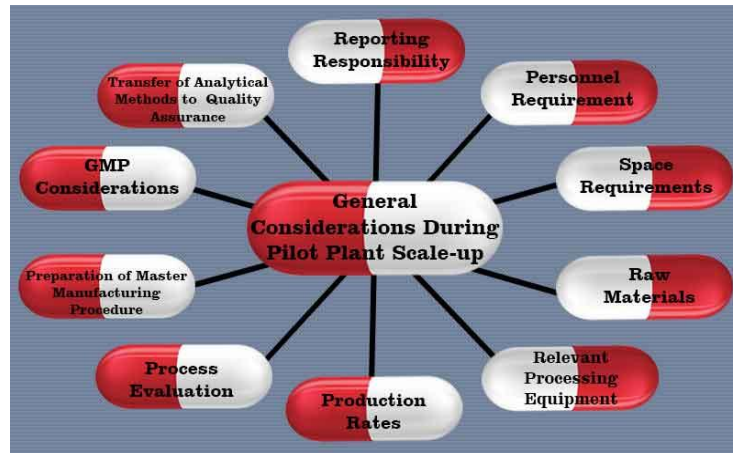
### **1.3 Objectives-**

1. To provide therapeutic dosage forms that are both physically and chemically stable.
2. Suitable processing equipment selection and validation. Selection, approval and validation of raw material specification.
3. Evaluation and validation of process as well as production control.
4. Evaluate and determine the product formula's capacity to withstand batch-scale conversion.
5. Find mistake in small scale and assure the quality in large scale.

### **1.4 This pilot can be used for –**

1. Analyze the outcomes of laboratory research, product development, and manufacturing procedures.
2. Creating small amounts of goods for shelf-based research, storage stability, restricted market testing, sensory, chemical, and microbiological analyses.
3. Identify marketable byproducts that need treatment before being released.
4. Provide records that may be used to help you decide whether to go through with the whole manufacturing process; if you make the right choice, you can design and construct a full-size plant from scratch or make modifications to an existing one.

## 2. GENERAL CONSIDERATION



### 2.1 REPORTING RESPONSIBILITIES –

1. Research & Development team with a diverse staff.
2. Even when the switch from development to production is complete, a facilitator of product development may still produce and provide assistance.

### 2.2 PERSONAL REQUIREMENTS-

1. Scientists with experience in actual production environments as well as in pilot plant operations are preferred.
2. Because they must comprehend both the intent of the formulator and the attitude of the production staff.
3. The team must have some engineers on staff, and scaling up also requires an understanding of engineering theory.

#### 2.2.1 SPACE REQUIREMENT

1. Management and data processing
2. Physical assessment region
3. Standard equipment floor space
4. A storage space

#### 1. Administration and record processing –

- a) Both scientists and technicians should have access to adequate offices and desk space.

b) The area need to be close to the workplace.

2. **Physical evaluation area-** Equipment used for physical testing should be given top place. such as a pH metre or digital balance.

3. **Standard equipment floor space –**

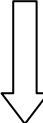
- a) a) A separate pilot plant area has the machinery required to produce all different kinds of dosage forms.
- b) Median length and complete length manufacturing device is vital in estimation the consequences scale-up of studies method and process.
- c) Equipment used should be made movable where ever possible.
- d) Space for cleansing of the instruments ought to be additionally provided.

4. **Storage area –**

- a) This area should be provided with an approved and unauthorized area for active and auxiliary ingredients..
- b) It should be provided for the warehouse of the raw material, end Manufacturing produced goods from the pilot plant and materials from the pilot scale-up batches.
- c) Packaging space must also be provided.

### 2.3 RAW MATERIAL

1. The pilot plant's approval and validation of raw materials for active ingredients and excipients is one of its functions or responsibilities.

Why? 

- 2. It is not necessarily which raw materials are used in pilot plant scale for further used in commercial scale.
- 3. Particle size is important for formulation of product like particle size, particle shape can lead to variations in bulk density, static charge, solubility rate, flow characteristics, etc.
- 4. Very small particles have developed due to the static charges and decrease the solubility of drugs.

## 2.4 RELEVANT PROCESSING EQUIPMENT:

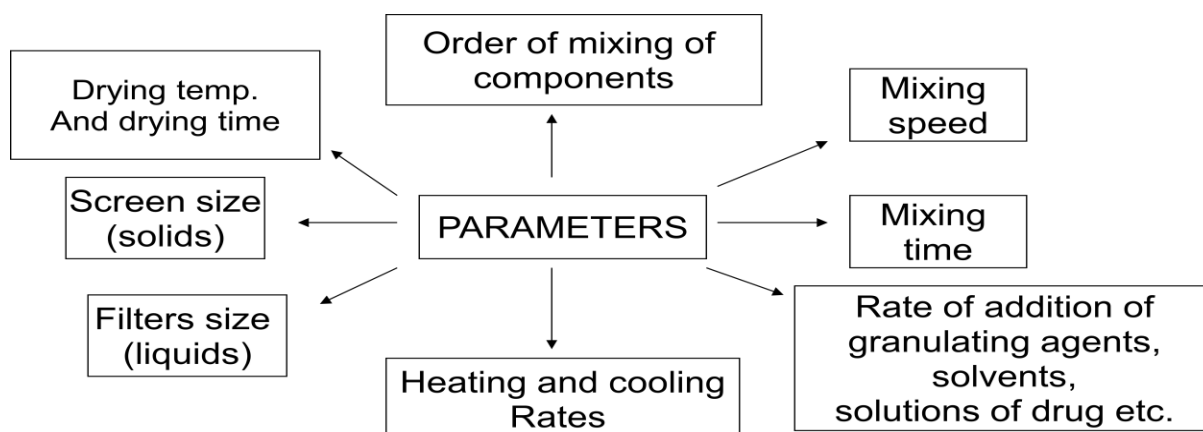
1. The simplest, most cost-effective machinery that can produce goods that meet the requested standards is utilised.
2. The size of the machinery should be determined by the size of the manufacturing batches.
3. The procedure won't develop the scale-up if the equipment is extremely little.

## 2.5 PRODUCTION RATES:

The main aim of production rates is quality with speed.

1. Product is loss at some stage in the producing with inside the equipment.
2. The two batches are prepared for given time for cleaning the equipments between the batches.

## 2.6 PROCESSE EVALUATION



**Figure 2.2** – Process evaluation parameters during pilot plant

## 2.7 MASTER MANUFACTURING PROCEDURE PREPARATION:

It consists of

1. The weight sheets for chemicals. How many chemicals are required in a batch should be stated, along with their quantity and possible use sequence.
2. The guidelines for sampling
3. Developing and finishing product requirements.
4. Manufacturing instructions should be written in a language that the operator can comprehend and are referred to as SOPs.

5. It has a variety of parameters for temperature, heating and cooling rates, addition rates, and blending periods and speeds.

6. Appropriate documentation has to be done.

#### 2.8 PRODUCT UNIFORMITY AND STABILITY: -

1. The physical and chemical stability of the products is the most crucial aspect of the pilot plant.

2. As a result, stability testing should be done on each pilot batch that represents the final formulation and production process.

3. Final formulations should also include stability studies.

#### 2.9 GMP CONSIDERATIONS:

##### 2.9 GMP CONSIDERATIONS,

It should be a component of scale-up efforts to:

1. Schedule preventive maintenance on a regular basis.
2. Conduct regular process reviews and revalidations
3. Appropriately documented quality working processes.
4. Employing knowledgeable, technically skilled employees
5. Enough resources are provided for staff training
6. A clear procedure for technology transfer
7. Approved cleaning techniques.
8. Proper equipment placement facilitates material flow and reduces cross-contamination.

#### 2.10 ANALYTICAL METHODS ARE TRANSFERRED TO QUALITY ASSURANCE:

Method for transferring quality assurance was created by the analytical research section.

1. The following elements are included in the transfer procedure.
2. Go through the procedure to confirm that the right analytical tool is on hand.
3. Employees need to be trained to administer the exam.
4. The test's dependability should be examined.
5. Before transferring, the test technique should be evaluated.

#### 2.10 TRANSFER OF ANALYTICAL METHODS TO QUALITY ASSURANCE:

Analytical research department developed method to transfer Quality assurance.

1. Transfer process includes the following aspects.
2. Review the process to make sure that the proper analytical instrument is available.
3. Personnel should be trained to perform the test.
4. Reliability of the test should be checked.
5. At last assay procedure should be reviewed before transfer.

### **3. PILOT PLANT SCALE – UP FOR SOLIDS (TABLETS):**

1. In scaling up the manufacture of tablets and capsules from experimental laboratory batch sizes to intermediate and large scale production, each stage of the operation must be carefully considered.
2. Same manner, equal device however distinct overall performance while quantity of substances improved significantly, may also contain a prime manner alternate that make use of strategies and device that had been both unavailable or improper on a lab scale.
3. The following are the standard unit operations concerned in manufacturing of solid dosage forms.

#### **Stages of Production of Tablets:**

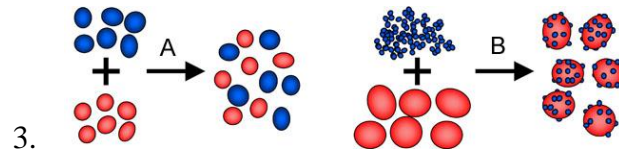
##### **3.1 Material Handling -**

1. The matters are actually poured via hand, but middle- or wide ranging operations, Pick - up of this materials frequently turn out to be required.
2. If many materials are used to change the process to stop contaminant.
3. It should be ensure correct quantity of substances to be reached in specific palace.
4. It should be selected for the system depends upon the property of substances.
5. There is minimal lack of material.
6. More superior techniques of dealing with substances which include vacuum loading systems, metering pumps, screw feed device.

**3.2 Reduction of Particle Size**– Various particle size measurements are used to reduce size reduction such as milling, mixing, homogenizing, etc. Particle size reduction is important for granulation process because various factor affecting of the formulation like dissolution, disintegration etc.

##### **3.3 Dry Blending**

1. Dry mixing method makes use of a binary cohesive powder combination which include unlike molecule sizes.
2. It is well known that finer particles adhere preferentially on the surface of the coarse particles. It is also called as bilateral blend.



4. It should be used for powder for encapsulation or to be granulated ensure good drug distribution.
5. Inadequate mixing at this level should bring about discrete part of the batch being both excessive or low in potency. It should be ensure that all the ingredients are free of aggregates.
6. Screening and/or milling of the ingredients usually makes the process well grounded and reproducible.
7. These equipments are used -V-blender, Double cone blender, Ribbon blender, Slant cone blender, Bin blender.

### SCALE-UP CONSIDERATIONS

- a) Time of blending.
- b) **Blender loading.**
- c) Size of blender.

### 3.4 GRANULATION:

#### **Important instructions during the granulation**

- a) To expansion fine properties of the material,
- b) To increase the bulk density of the powders,
- c) To change the particle size distribution,
- d) Invariable dispersion of active pharmaceutical ingredient.

#### **3.4.1 Wet granulation-** binder solution is added to wetting and binding of a powder blend.

The wet mass is prepared, screened and dried to obtained granules.Equipment used in wet granulation process-

- a) Sigma blade mixer

b) Planetary mixer

Factor affecting scale up process-

a) Granulating time

b) Granulating temperature

**3.5 Drying:** Drying is the major critical procedure after granulation however numerous element thinking about in drying operations are air flow, air temperature and intensity of the granulation.

Fluidized Bed Dryer:

- Optimum loads - rate of airflow.
- Inlet air temperature.
- Humidity.



Fig – 3.1 Fluidized bed dryer

**3.6 Slugging:** Slugging is a pre-compression technique for the formation of greater big tablets (slugs), typically of variable weight, because of bad waft of the drug powder. The ensuing slugs are ultimately damaged down into granules, which can be recompressed to attain the finishing tablets. This is completed on a tablet press designed for slugging, which operates at pressures of approximately 15 heaps, as compared with a regular pill press, which operates at stress of 4heaps or less. If too much quality powder is generated all through the milling operation, the substances need to be screened and finely recycled via the slugging operation.

**3.7 Dry Compaction** - In a process using counter-rotating rollers, the formula's components are continuously surpassed to generate a sheet of stable mass that is then



densified. The feed materials may be compressed into dense briquettes (almond or stick-shaped) if the rollers have grooved or etched surfaces, or into dense ribbon-like materials termed flakes (easy rolls), depending on the kind of rollers being used. Similar milling, sizing, lubrication, and compressing of the condensed materials results in the tablets. Curler compaction is necessary to increase the bulk density of materials with a very low density to a level that allows encapsulation or compression. In order to create a granulation with the necessary tableting or encapsulating qualities, pilot plant staff should assess if the final drug combination or the active entity may be handled in this way more effectively than by normal processing.

**3.8 Compression:** The final check of the tablet method and granulation may be compressed on a high-velocity tablet press. Compression parameters may be evaluated with the aid of using press velocity same to standard manufacturing velocity. Then detect the problems such as,

- Sticking to punch surface
- Tablet hardness
- Capping
- Weight variation

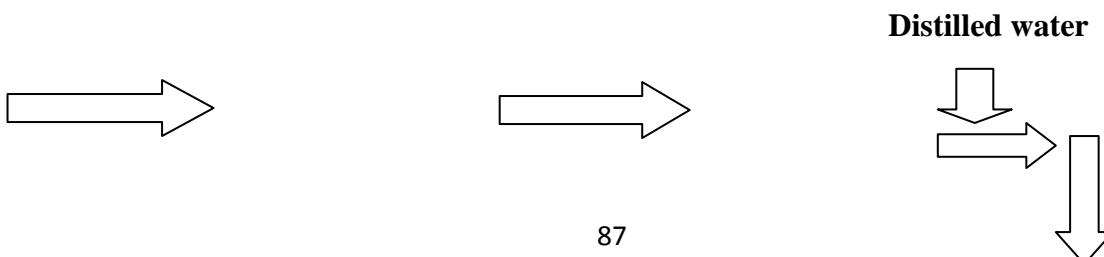
Granules must be delivered at adequate rate

**3.9 Tablet Coating:** Many changes in Sugar coating (Carried in conventional coating pans), due to new developments in coating technology (Conventional sugar coating pan changed to perforated pans or fluidized-bed coating columns), changes in safety and environmental regulations

**Pan and fluidized coating:**

- Optimum tablet burden.
- Working tablet bed temperature.
- Drying airflow velocity and temperature.

**General Flow Chart –**



**Raw Material**

**Measured and Weighed  
Filling**

**Mixing**

**Storage**

**Packing**

**Quality Assurance**

**Finished Product**

Fig – 3.2 Flow chart of solid dosage form

**4.0 Encapsulation of hard gelatine capsule** – Both tablet and capsules are produced from ingredients that may be either dry blended or wet granulation to produce dry powder or granules. These are various factor which affect good flow characteristics like bulk density, particle size distribution and compressibility. There are two types of equipments used in capsule filling operation, Zansai machine. and Hofliger kark machine.

**Scale up considerations-**

1. Bulk density
2. Powder flow
3. Lubricant distribution
4. Compressibility
5. Size and type of equipment used in blending.

**CONCLUSION-** Pilot plant scale up techniques is important for development for large scale production. The various variable like granulation feed rate, coating, rate of air flow, temperatures and humidity play an important role in pilot plant technique. With the help of pilot plant technique, we can increase our working efficiency. The significance of pilot plant scale up studies give range of relevant processing equipments and other infrastructure facility layout.

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## New Era Of Business Market Through Ecommerce Model

**Taher Ali<sup>1</sup> , Arshad Hussai<sup>2</sup>**

<sup>1</sup>School of Computer Application, Career Point University, Kota, India,  
Email K21505@cpur.edu.in

<sup>2</sup>Assistant Professor School of Computer Application, Career Point University, Kota, India

*Abstract-In e-commerce model, seasonality has a significant role in determining relevancy. A question jacket, for instance, has a different collection of pertinent papers in the winter than in the summer. For the best possible user experience, Seasonality in product search should be taken into account by e-commerce search engines. In this report Using information from a significant e-commerce site, we formally establish the idea of seasonal relevance, describe it, and measure it. According to our findings, 39% of the questions are extremely seasonal in nature and could benefit from having seasonality taken into account when ranking. We suggest LogSR and VelSR features, which are cutting-edge neural models based on self-attention, to capture product seasonality.*

*Large-scale offline and online trials demonstrate the effectiveness of our strategies for modelling seasonal relevance. The findings of the online A/B test on 784 MM queries indicate that the treatment with features for seasonal relevance leads in 2.20% higher purchases and a better overall customer experience.*

**Keywords:-Seasonality; E-commerce search, Learning to rank, Natural language processing, Self-attention mechanism**

### **I INTRODUCTION**

Search and suggestion are primarily responsible for product discovery in e-commerce. Increasing product relevancy in e-commerce searches relies on a number of factors, including the user, time, context, and query. Although the dimensions of the user, question, and context are well understood in information retrieval research and are included in e-commerce search engines, the time dimension is under addressed. notably in terms of relevancy. In contrast, the topic of temporal information retrieval is well investigated in web search. Studies have been done to profile the temporal aspects of questions, including their sensitivity to time. Another line of inquiry combines web search ranking with temporal data.

In this report, we give a thorough investigation of seasonality as a factor in search engine relevancy for e-commerce. We outline methods for spotting seasonality in queries and products, as well as attributes that might be used to capture it. During a typical learning-to-rank (LTR) framework, several features can be used. Finally, we present search experiments that assess the usefulness of the features. The importance of managing seasonality in e-commerce search is demonstrated by increased metrics, such as 0.62% more clicks, 1.22% more add-to-carts, and 2.20% more transactions.

- Electronic trading of physical goods and of intangibles such as information.
- All the steps involved in trade, such as on-line marketing, ordering payment and support for delivery.
- The electronic provision of services such as after sales support or on-line legal advice.
- Electronic support for collaboration between companies such as collaborative on-line design and engineering or virtual business consultancy teams.

## II. LITERATURE REVIEW

**HaodeYang(2018):** - “Seasonality is an important dimension for relevance in e-commerce search. For example, a query jacket has a different set of relevant documents in winter than summer. For an optimal user experience, the e-commerce search engines should incorporate seasonality in product search. In this paper, we formally introduce the concept of seasonal relevance, define it and quantify using data from a major e-commerce store. In our analyses, we find 39% queries are highly seasonally relevant to the time of search and would benefit from handling seasonality in ranking. We propose LogSR and VelSR features to capture product seasonality using state-of-the-art neural models based on self-attention. Comprehensive offline and online experiments over large datasets show the efficacy of our methods to model seasonal relevance. The online A/B test on 784 MM queries shows the treatment with seasonal relevance features results in 2.20% higher purchases and better customer experience overall.”

**Shahid Amin(2016):** - “E-commerce is a boom in the modern business. E-commerce means electronic commerce. E-commerce (Electronic commerce) involves buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, predominantly the Internet. E-commerce (Electronic commerce) is a paradigm shift

influencing both marketers and the customers. Rather e-commerce is more than just another way to boost the existing business practices. It is leading a complete change in traditional way of doing business. This significant change in business model is witnessing a tremendous growth around the globe and India is not an exception. A massive internet penetration has added to growth of E-commerce and more particularly start-ups have been increasingly using this option as a differentiating business model. Moreover E-Commerce has significant influences on the environment. Although the model is highly used in current business scenario but the option has not been explored at its fullest. The current research has been undertaken to describe the scenario of E-Commerce, analyze the trends of E-Commerce. The study further examines the key variables imperative for the success of E-commerce business models. “

### III. METHODOLOGY

#### A. SEASONALITY AND RELEVANCE

E-commerce items can be seasonal (like a raincoat) or always in demand (e.g. jeans). We conduct our research on a significant e-commerce site's fashion categories. The seasonal and holiday patterns of sales in the fashion categories reflect the shifting preferences of consumers for different product categories and fashion trends over the course of the year. For instance, there were dramatic differences between the two costumes.

#### B. DEFINITION OF SEASONAL RELEVANCE

We determine a product's seasonal relevance based on its sales, reasoning that an increase in demand and consequently sales while a product is in-season reflects consumers' perceptions of seasonal significance We use the same time frame as and use a month. Assume that A is the product purchased, M is the month of purchase, and E is a purchase event. We define the seasonal relevance of a product for any pair of products a and month m, where  $m \in \{1, \dots, 12\}$ .

$$P_{am} = P(M = m | A = a)$$

fundamentally a probability distribution, and  $P_a = (P_{a1}, \dots, P_{a12})$ .

A product's  $P_{am}$  can be calculated by looking at how much of its annual sales are concentrated in month m for product a. Using its raw form instead

In order to distinguish between trends in product sales and those simply brought on by a change in overall sales, we normalise the statistics with the monthly sales overall.

$$Q_{am} = \frac{S_{am}}{S_m} \quad \forall m=1 \dots 12$$

as a predictor of  $P_{am}$ , where  $S_{am}$  represents the sales of product A in month M and  $S_m$  represents the month's overall sales.  $Q_a = (Q_{a1}, \dots, Q_{a12})$  is known as the product monthly sales concentration vector (MSC). We use the same procedure for inquiries. The chance of encountering a question in a given month conditioned on its occurrence is known as the seasonal relevance between a query and a month, and it may be determined using query volume. The query monthly volume concentration is then  $Q_a$  (MVC).

### C. APPROACH

We outline a prognostic method to model seasonal importance in this section. Both products and enquiries can be addressed using our strategy. To avoid duplication, we go into detail about product seasonal relevance, and inquiries can be derived in accordance with that.

### D. SEASONAL RELEVANCE MODELLING

As was covered in Section 2,  $P_{am}$  can be used to determine the seasonal relevance of a product during a month. Using data from  $Q_{am}$  to estimate  $P_{am}$  could provide two problems: It only applies to products having past sales, because product sales in a given month—which are utilised in the  $Q_{am}$  calculation—can be noisy for a variety of reasons, including user behaviour and discoverability. For instance, the same down jacket in two different sizes had obviously different MSCs, as seen in Table 1.

Despite the fact that both peaked in popularity between October and February, one was more prevalent towards the end of the year than the other. We use a predictive technique to learn  $P_{am}$  from data in order to address the aforementioned cold start issue and reduce noise.

Learn  $f$  by reducing  $L() =$

Since  $Q_a$  and  $f(X_a; \theta)$  may be seen as two probability distributions,  $\mathcal{L}(Q_a, f(X_a; \theta))$  where  $\mathcal{L}$  is the following cross-entropy loss.



$$(u, v) = - \sum_{m=1}^{\infty} \log v_m$$

In order to complete our learning job, which involves turning text into numerical values, we adhere to the most recent best practise by using dense vector representations of words [19, 20]. We employ FastText embeddings [1] in particular because (i) they handle uncommon and low-frequency words effectively, deliver good results for noisy text, such as product titles in e-commerce [10], and (ii) they are lightweight and increase system efficiency. Because neural networks have a track record of successfully modelling text semantically for downstream tasks, we employ them to model function  $f$ . Figure 2 depicts the model's architecture.

## IV RESULTS AND IMPLEMENTATION

We initially discuss our findings regarding the seasonality of queries and products in this section. We provide theories regarding the underlying customer behavior. Because the latter is too noisy to draw trustworthy conclusions, as was previously noted, our analyses are based on the seasonal relevance projected by our prediction approach rather than that estimated directly from data. We then go over how our strategy for factoring product seasonal relevance into search ranking would affect e-commerce search. Through offline analysis and online A/B testing, we gauge the impact. A qualitative study is presented to show how the customer experience has changed.

### A. QUERY SEASONALITY

Because query language is typically shorter than product names and users purchase a wide range of products but submit a smaller set of queries, query MVCs computed from data are less noisy than product MSCs. Table 3 displays MVCs for two sets of data-driven queries. Christmas sweater has an especially strong seasonal relevance to November and December, as would be expected, and sweater is seasonally relevant to late fall and the full winter season. In the other pair, summer clothing has a flatter distribution throughout the entire year even though spring and summer are when it is most relevant to the season.

We segregate all query-month data to better understand how query seasonal relevancy relates to query volume and purchases.

## **B. RELATED WORK**

We highlight research areas that are pertinent to the study and use of temporal characteristics in recommender systems and information retrieval (IR).

profiling of inquiries' and documents' temporal trends. A substantial amount of IR research, such as is devoted to profiling queries and documents from a temporal perspective. According to the frequency of the inquiries, research in quantifies the temporal dynamics of queries, whereas creates temporal profiles of each document by observing how its content evolves over time. All three works make use of time series analysis and concentrate on dividing the relevant components into groups like seasonal and non-seasonal. In contrast, link interesting things to discrete periods of time. The chance that a document is relevant at a particular point in time is how both works define temporal relevance. Their probabilistic environment is similar to how we operate. Estimates of query-time relevance from

We highlight research areas that are pertinent to the study and use of temporal characteristics in recommender systems and information retrieval (IR).

## **V. CONCLUSION**

In this study, we explicitly establish the idea of seasonal relevance within the framework of learning-to-rank for e-commerce search.

Additionally, using empirical data, we give quantitative studies of the actual effects of seasonality on e-commerce search traffic.

examine the scope and effects of a large e-commerce site's query data. A principled approach to modelling seasonal relevance is provided by proposed features based on neural models, which also helps to eliminate data-specific noise and generalize the model. The importance of managing seasonality in e-commerce search is highlighted by many offline and online experiments. The A/B test on 784 MM searches indicates unequivocally that the proposed approaches show more seasonal products, which statistically leads to more purchases and improved customer satisfaction.

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# To Study The Effect of Blockchain Technology In Banking System

Vaibhav Dadhich<sup>1</sup> Dr. Garima Tyagi<sup>2</sup>

<sup>1</sup>*School of Computer Application, Career Point University, Kota, India*

<sup>2</sup>*Associate Professor School of Computer Application, Career Point University, Kota, India*

*Abstract- Blockchain technology is a method for storing digital data in a shared public database. This technology became well-known mostly as a result of the launch of the original cryptocurrency, Bitcoin. This technology is used by bitcoin to provide secure record-keeping. This paper will first provide a general overview of blockchain and demonstrate its operation. The discussion will next go on to some generic blockchain applications. In addition, you should conduct a brief assessment of this technology generally and specifically as it relates to the banking sector. Similar to other industries and services that have undergone radical change as a result of "digitalization and technology," such as the movie and television industry, navigation services, etc.*

*Due to its high levels of security, transaction transparency, decentralization, and efficiency, blockchain technology has the potential to totally disrupt the banking industry. The relationship between blockchain technology, financial technologies, and sustainability will also be covered. Finally, it will be examined how blockchain technology will change the financial sector and how difficult it will be to embrace and execute.*

**Keywords: - Blockchain, Blockchain Architecture, Need of Blockchain, Application of Blockchain**

## I. INTRODUCTION

The banking business has been serving as a middleman for financial transactions since its inception. They've been offering the trust necessary for the flow of money. The banking system has always been impacted by technology. Banks have continuously changed how they operate to keep up with information and technological innovation. For information flow, banks are now linked to technology networks like SWIFT. Therefore, the banking sector depends entirely on technology to carry out daily tasks. Blockchain may therefore be a key driver for the banking industry.

Banks are frequently criticized for being wasteful, expensive, and opaque. Fintech companies like PayPal, Revolut, and N26 are upending traditional banks with their creative solutions. Blockchain offers an answer to these complaints as well as a competitive edge over the Fintech sector. The interest in blockchain has expanded significantly over time, and recently, central banks and governments have also been investigating its potential applications. The potential of blockchain is being explored by numerous banks globally, so the future is undoubtedly bright.

- A blockchain is an online ledger that uses a data structure to simplify transactions
- It allows users to securely manipulate the ledger without the need for a third party
- It enables the use of cryptocurrency in a decentralized environment
- It provides transparency through distributed ledger technology, where network participants share the same documentation
- It reduces the need for third parties or intermediaries, resulting in lower costs
- It offers new tools for authentication and authorization in the digital world and enables the creation of new digital relationships.

## II. LITERATURE REVIEW

**C Mallesha, S.Haripriya:** - “ The 21st century is all about technology. With the increasing need for modernization in our day-to-day lives, people are open to accepting new technologies. From using a remote for controlling devices to using voice notes for giving commands; modern technology has made space in our regular lives. Technologies like augmented reality and IoT have gained pace in the past decade and now there’s a new addition to the pack i.e. Blockchain Technology. In the simplest terms, Blockchain can be described as a data structure that holds transactional records while ensuring security, transparency, and decentralization. You can also think of it as a chain or records stored in the forms of blocks which are controlled by no single authority. A blockchain is a distributed ledger that is completely open to any and everyone on the network. Once information is stored on a blockchain, it is extremely difficult to change or alter it. Each transaction on a blockchain is secured with a digital signature that proves its authenticity. Due to the use of encryption and digital signatures, the data stored on the blockchain is tamper-proof and cannot be changed.”

**Thulya Palihapitiya:** - “Today, banks are affected by economic and digital transformation, financial innovations and development of the internet. Blockchain technology with cryptocurrency is an underlying technology with promising application in the banking sector.

Therefore, Aim of this paper is to do research on the impact of the Blockchain platform in the banking industry. To understand this technology, this research is to analyze technology functions with the model and anatomy of Blockchain architecture. Many researches for Blockchain technology are carried out consensus algorithms and four of them are discussed in this paper. How the banking industry deals with this platform with advantages and limitations are mainly discussed in this paper.”

**Satoshi Nakamoto** : - In his white paper proposed “a peer-to-peer version of electronic cash which would allow online payments to be sent directly from one party to another without going through a financial institution or third party”. This emerged as a foundation for the most popular blockchain application i.e. bitcoin.

**Melanie Swan** : - Explains that the “blockchain is a decentralized public ledger that can be used for the registration, inventory, and the transfer of all assets in finances, property as well as in intangible assets such as votes, software, health data, and idea”. He considered the theoretical, philosophical, and societal impact of cryptocurrencies and blockchain technologies.

### III. METHODOLOGY

#### A. HOW BLOCKCHAIN WORKS?

Blockchain, the name is adapted from the way it works – blocks connected to form a chain. The transaction recorded in a block contains a hash (digital signature), hash of previous block and the ledger of all valid transactions. The hash links the block one after another and strengthens the verification of the previous block. Thus, an immutable blockchain is formed.

1. A node of the network starts a transaction by creating, then digitally signing with its private key.
2. The transaction is represented as a block.
3. The block is broadcast to every participant in the P2P network.
4. The transaction is propagated by using Gossip protocol, to participants to validate the transaction based on data and history of transaction. More than 50% of nodes are required to verify the transaction.
5. When the transaction is verified and validated, a block can be added to the blockchain.
6. Newly created block now becomes a part of the ledger and money (cryptocurrency like bitcoin) moves to the other party.

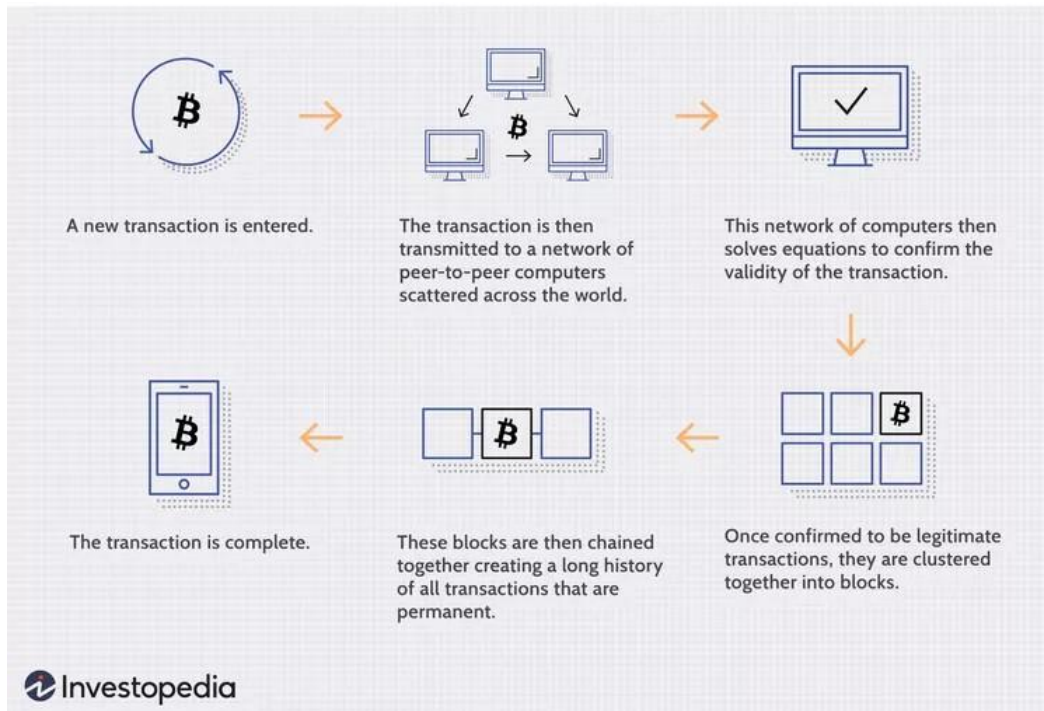


Figure 1: How a Blockchain works

**1) Public Blockchain** - This provides an open platform for people from various financial organizations like banks and backgrounds to join, transact and mine by decentralized consensus mechanisms. There are no restrictions. So they are called ‘Permission less’ blockchains. Blockchain is specific to the user without specific validator nodes. All the participants have power to write and read transactions, and perform auditing and view transactions of the blockchain.

**2) Private Blockchain** - These systems facilitate exchange of data and private sharing among a group of individuals or selected people or multiple organizations controlled by selective individuals or one organization. These blockchain systems are called permissioned Blockchain. Therefore unauthorized access can’t do, without any special permission. Each and every node maintains a copy of the ledger to reach a consensus, but unlike public blockchain the writes are restricted.

**3) Consortium Blockchain** - This blockchain system can be considered as a partially private and permissioned blockchain, not a single organization or person but a set of predetermined nodes that are responsible for consensus and block validation. Nodes decide who can join the network and mine data. . This is not a fully centralized system, but it has the ability to control some selected validator participants or peers. There are some limited abilities to read and write transactions. These nodes do not guarantee immutability and irreversibility.



## B. BLOCKCHAIN ARCHITECTURE

The Blockchain architecture consists of four concepts as decentralization, digital signature, data mining and data integrity.

- 1) **Decentralization:** Blockchain distributed control among all the participants or peers in the chain and creating a shared infrastructure.
- 2) **Digital signature:** An exchange of transactional value using public keys by the mechanism of a unique digital sign enabled by Blockchain. All the participants in the network know the code for decryption. Private keys known only to the owner to create ownership.
- 3) **Mining:** Every user in the system mines and digs data which is evaluated according to the cryptographic rules. This also acknowledges miners for confirmation and verification of the transactions.
- 4) **Data integrity:** Algorithms and agreements among participants ensure that the transaction data, once agreed, cannot be tampered [1]. Data stored in the system act as a one version for all parties while reducing risk of fraud.

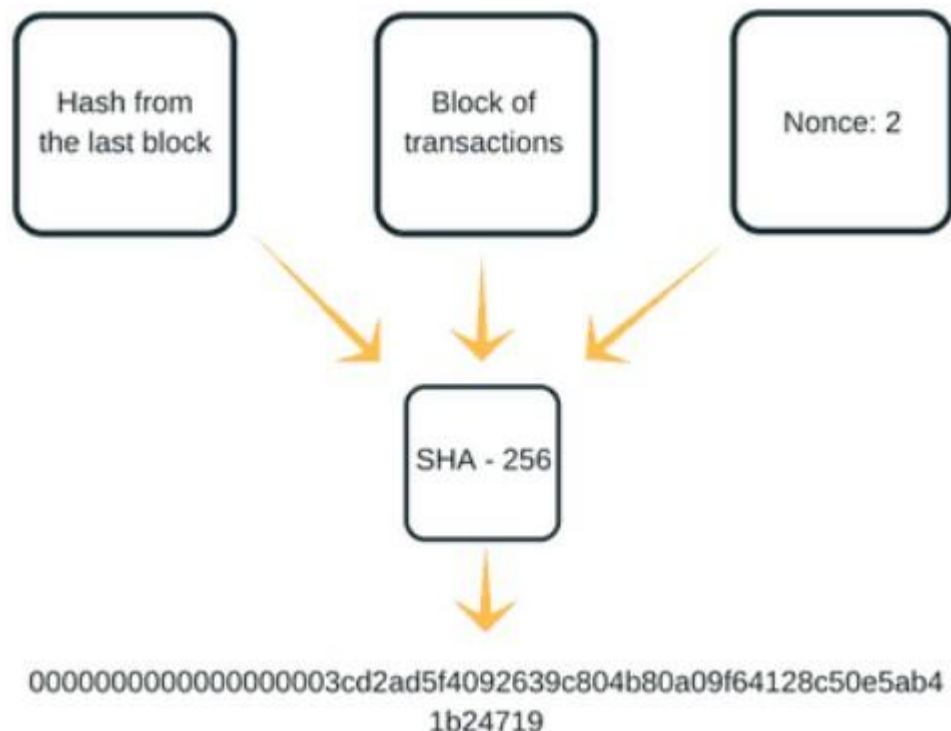


Figure 2: How the hash value create for each block

## C. BLOCKCHAIN TRANSFORMATION OF BANKING SERVICES

Blockchain technology promises a huge opportunity to recover the challenges in the banking industry. There are several use cases with advantages and limitations with blockchain technology.

1. **Payments** : These are the important use case of any financial and banking systems. Both commercial and central banks are going to use this blockchain technology for the payment process. These are important for cross border payments, without third party payments can be done very quickly. Some problems related to the cryptocurrency exchange to the local money can happen because of changes in exchange rates.

2. **Digital verification**: This can be done by removing all traditional verification systems like identity, face checking and proof of client intention by using blockchain. Blockchain provides ways to choose users who can identify them and others who like to share their identity without repeating registration for each banking service. Because of the shared ledger system, any participant can access information without permission. Therefore private information should not be added to the blockchain.

3. **Lending**: Traditional banks provide different kinds of loans. But it takes a long time. Blockchain can be used for this lending system with superfast transactions in a transparent way. Banks provide loans, KYC (Know Your Customer) and BSA (Bank Secrecy Act) and link all of them to a single consumer block. This system helps to save money and time for waiting the traditional long process.

4. **Bookkeeping, Accounting and Auditing**: Most of the traditional banks still depend on paperwork like double entry transactions and after a long process they digitize the details slowly. Banks can directly enter their transaction details into the shared ledger system . All the records are transparent and irreversible when using blockchain. This system has a feature of smart contracts which can pay invoices automatically. People who work in banks should have prior knowledge about blockchain is a considerable limitation.

5. **Crowdfunding**: This is an online raise funding mechanism by involving large numbers of people with small amounts of money. Initial Coin Offerings (ICOs) have the ability to sell

their tokens via the internet, with the decentralization advantage by using blockchain technology. This has a risk because of the legal issues in ICOs.

6. **Smart contracts:** Smart contracts are a set of code which is stored in Blockchain. These programs execute automatically when conditions are met. They perform cryptographic transactions, transparency without intermediaries because of the decentralized ledger in blockchain.

7. **KYC (Know Your Customer):** Traditional KYC processes use a lot of time to perform individually in all banks and other financial institutions. Using Blockchain, independent verification of each customer of one bank can be accessible for other banks. This process helps to eliminate duplication, reduce administrative effort and save time.

#### **D. LIMITATIONS OF BLOCKCHAIN TECHNOLOGY**

1. **High initial cost:** Blockchain saves transaction cost and time but it needs high initial capital cost.

2. **Complexity:** This technology involves entirely new vocabulary. Participants should have specialized knowledge about the technology.

3. **Network size:** Blockchain requires a large network of participants. If it is not a widely distributed grid of networks, it becomes more difficult to achieve the benefits.

4. **Transaction cost:** Transaction cost for the first few years is free. But after that there is a rising transaction cost in the network.

5. **Limited scalability and storage issues:** Blockchain has a consensus mechanism to verify the transactions. This limits the number of transactions that can be made in a given time period. Blockchain has an immutable distributed chain of blocks that grows at a very rapid space, then this can cause for storage issues.

6. **Unavoidable security flaw:** If more than half of participant nodes to service the network are a lie, it will become a truth.

7. **Energy and resource consumption:** A blockchain network consumes heavy resources. When the blockchain network grows, miners need to validate the blocks. So it increased heavy energy consumption

## **E. FUTURE IMPROVEMENTS OF BLOCKCHAIN TECHNOLOGY**

1. Blockchain and bitcoin are really hard to those who are not working with technology and software development. So one of the future improvements is to build tools to make the transactions easier.
2. Storing data in the Blockchain is quite expensive so make a solution to store the data off the chain and send them to the blockchain periodically.
3. Making laws to adopt blockchain technology for the industry is necessary for the revolution of the banking industry.
4. Blockchain will hope to reduce their prices and improve their quality of services with new features in near future.

## **IV. CONCLUSION**

Blockchain is a decentralized digital ledger which cannot achieve hacker's objectives. Therefore Security wise, it is a very important technology to adopt in Sri Lankan Financial industries like banks. This also helps to enhance the efficiency of the banking industry. There are a lot of opportunities with Blockchain technology with immeasurable values. This provides a unique way to establish cryptography transactions, by enabling simplification of money in the world. Giants in the banking industry started to search possible new use cases to expand their services by using Blockchain. This technology revolutionized the underlying sectors in credit information systems, payment clearing, lending systems, digital verification, audit keeping systems, crowdfunding, smart contract and KYC in banking. PBFT is the best consensus algorithm for payments and transactions. Banks used POW for digital verification because it is the best algorithm which provides better security. PBFT or BFT is mostly used for syndicated lending in the banking industry. Both PoW, Pos and DPoS are used for crowdfunding in the banking sector. Based on the type of cryptocurrency algorithms will change in smart contracts. If the cryptocurrency is Bitcoin for smart contracts most of the time we use POW. If the cryptocurrency is Ethereum for smart contracts most of the time we use POS. Most of the banks used PoW for KYC. Prospect of this technology into the banking industry will occur in the near future. When using Blockchain, there are some challenges. To solve these challenges we should provide facilities to reduce initial cost to adopt blockchain in the banking sector. System usage complexity is high. Therefore developers should reduce complexity and give prior knowledge for the users. Then we can minimize adoption and usage problems related to blockchain technology. Blockchain should develop for small scale

networks as well in future. According to the consensus algorithm power consumption can be changed. Therefore we should select the best algorithm for relevant banking service. Developers should reduce unwanted security flows and make them simpler to use. This paper gives a comprehensive review of the blockchain revolution in the banking industry. Blockchain is the next best invention after the internet. Therefore my opinion is that blockchain is a great disruptive technology which will revolutionize the banking sector in a better way in the near future.

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# Electronic Payment Systems: Architecture, Elements, Challenges and Security Concepts: An Overview

Riddhi Jain<sup>1</sup> Shalini Chawla<sup>2</sup>

<sup>1</sup>*School of Computer Application, Career Point University, Kota, India*

<sup>2</sup>*Associate Professor School of Computer Application, Career Point University, Kota, India*

*Abstract- In this paper, the major aim is to investigate the heightened awareness regarding various electronic payment systems-related concepts in terms of their advantages, problems, and security issues. The payment processing system providers use software as a service (SaaS) model and with this model, they form a single payment channel to numerous payment methods for their clients. Users often give away their personal information such as names, card details, and so on whenever they go online to make any form of payment. An online payment system is referred to a system that facilitates electronic money exchange. This form of payment typically involves the deployment of the Internet, computer networks, and other digital stored value systems. Collecting any form of payment over the internet implies that the user has accepted an online payment and must have shared some confidential information with the service provider. This paper embarks on a thorough review of all aspects of online/electronic payment with emphasis on the analysis of numerous studies on electronic payment systems. The latest studies have been explored to gain insight on the electronic payments systems.*

*Keywords: Electronic Payment, Information Hiding, Steganography, Cryptography.*

## I. INTRODUCTION

The exchange of goods and services between 2 persons start before the advent of written history; but as the exchange of goods become more difficult between persons, they began to represented values in an abstract manner, starting with the barter system to the use of certified notes, payment orders, cards (debit or credit), and recently the electronic or e-payment systems [1]. The customary payment methods are well-known to have certain issues such as false signatures, cash falsification, and bounced cheques. However, a well-planned e-payment system can address these security issues and provide an added advantage of usage pliability [2, 3]. E-payment systems have received much recommendation due to their ease of money exchange, security, and faster access to capital resources [4–6]. The conventional cash payment systems have become more expensive compared to the recent strategies due to the recent impacts gained by minor financial transactions in most economies. Furthermore, interne cash processing can

have less value compared to the smallest cash estimation in the manual world [7]. As the web keeps impacting our daily lives, people are getting used to online transactions when buying or selling products [8]. However, the increased dependence on web-based transactions for cash-related activities has come with issues that cannot viably be solved by the traditional payment methods. For this reason, financial experts have begun to investigate different e-payment systems with emphasis on the issues associated with digitalized and e-payment systems [3]. Each online transaction is processed through payment gateways which serve as a point for accessing different financial organizations. The payment details between different parties and financial institutions are validated through these payment gateways [8]. In this paper, a detailed description of the increased awareness on electronic payment systems (EPS) was provided. This paper is arranged as follows: Section 2 provides various definitions and aspects of EPS while Section 3 and Section 4 cover the advantages and popularity of EPS. In section [6], the problems associated with payment system is provided while the important security issues of EPS are presented in section [7]. A review of the related works to EPS is presented in section [8] while section 8 concludes the paper.

## **II. LITERATURE REVIEW**

**ELECTRONIC PAYMENT SYSTEM (EPS)** With the increase in the exchange of goods among different business partners over the Internet, the conventional cash-based payment system has been gradually relegated [9] as most people prefer an electronic payment system to the cash-based method. These e-payment systems are considered as a method of making payments for services over the Internet [10, 11]. An EPS can be described as a form of inter-organizational information system (IOS) dedicated for making money-related transactions between customers and different organizations. There may be a need for complex interactions between technologies, the environment, and the partners to ensure an effective EPS. The specific features of EPS/IOS also makes it technologically, organizationally, and relationally different from the traditional internal-based information systems [12–14]. This highlights the need for the cooperation among different technologies to make an effective system [15]. Over the years, there has been an increase in the global annual non-cash transactions facilitated through mobile and e-payment systems except for the year 2012 when there was a decline in the annual growth rate from 8.6% in 2011 to 7.7% in 2012 [16]. However, the year 2014 witnessed an increase in the global electronic payment to 8.9%, reaching 387.3 billion, representing the most significant increase since the World Payments Report was first published. This increase was mainly due to the quickened development in newly emerging financial markets. A projected higher worldwide development of 10.1% was anticipated for the year 2015 and predicted to take the global non-paper exchange volume to 426,300,000,000 [17]. Individuals and groups use e-



payment systems as a convenient and secure way of making cash payments over the internet and consider the channel as the gateway to technological advancement in global economy [18]. It has also become the major facilitator of e-commerce on which success in electronic business depends upon. E-payment systems have also reduced resourcefulness and fraud rate in the global payment system [11, 19].

### **History of EPSs**

Historically, e-payment dates to 1918 when the United States (U.S.) Federal Reserve Bank first moved currency via telegraph. However, this technology was not widely adopted in the US until the incorporation of their Automated Clearing House (ACH) in 1972. Since then, the popularity of the system became high, enabling the U.S. commercial banks and its central treasury to introduce it as an alternative to the conventional cheques payment [11].

The advent of credit cards also date to 1914 when customers were issued with cards by department stores, oil companies, Western Union and hotels to facilitate payment for goods and services. Forty years later, credit cards are being widely used and have become more acceptable as a payment option. Before the 1990s, credit cards were issued as paper-based payment options but later, they were transformed to electronic systems. The increase in the rate of credit card usage has led to a rapid growth in the industry and has ushered in the introduction of a debit card system. Both credit and debit cards are currently used globally for the payment for goods and services [10, 20].

### **Definitions of EPS**

The EPS is a complex term that portrays various methods of electronic payment delivery. Its multipurpose nature provides and increased imprecision of e-payment characterization in the literature. In terms of capabilities, e-payment can be considered as e-banking, e-cash, internet banking, m-payment, online banking, and so on. All things considered, researchers have recently strived to provide a comprehensive definition of e-payment [5]. The EPS is described by Ref. [9] as a form of financial commitment which brought a customer and a seller to the same platform via electronic means. Furthermore, Ref. [15] considered e-payment as a form of interrelation between people and associations powered by institutions that provides electronic financial transactions [12–18].

According to Ref. [21], e-payment is any form of internet-based money exchange. Similarly, Ref. [22] stated that an e-payment system is an electronic way of making payments for web-based services. In another explanation, e-payment is any form of payments/exchange made electronically [23]. Another researcher [24] considered e-payment as an online monetary exchange between two persons. Additionally, Ref. [25] defined e-payment as money-related exchanges facilitated via electronic means. Another definition of e-payment is any form of

payment that involves exchange of electronic information such as credit and debit card detail other than payment with cash or cheque [26].

As per Ref. [27], e-payment is a fiscal claim exchange by a payer on a worthy and useful party. According to Ref. [28], e-payment involves payments made through electronic transfers, an automated clearing house, or through a commercial card system. E-payment was defined by Ref. [29] as any form of money exchange via any electronic channel. Another definition of e-payment according to Ref. [30] is payments made through electronic signals linked to credit or debit bank accounts. E-payment, as per Ref. [31], is any form of non-money payment with the exception of a paper cheque. E-payment is defined by Ref. [32] as any electronic exchange that could be considered as a form of payment for goods and services made via e-payment channels that gives clients a remote access to their financial accounts via electronic systems. Generally, EPS can be defined as any form of monetary exchange between buyers and sellers via online platforms with the help of a digital financial instrument [33].

### **III. METHODOLOGY**

#### **A. HOW BLOCKCHAIN WORKS?**

Blockchain, the name is adapted from the way it works – blocks connected to form a chain. The transaction recorded in a block contains a hash (digital signature), hash of previous block and the ledger of all valid transactions. The hash links the block one after another and strengthens the verification of the previous block. Thus, an immutable blockchain is formed.

1. A node of the network starts a transaction by creating, then digitally signing with its private key.
2. The transaction is represented as a block.
3. The block is broadcast to every participant in the P2P network.
4. The transaction is propagated by using Gossip protocol, to participants to validate the transaction based on data and history of transaction. More than 50% of nodes are required to verify the transaction.
5. When the transaction is verified and validated, a block can be added to the blockchain.
6. Newly created block now becomes a part of the ledger and money (cryptocurrency like bitcoin) moves to the other party.

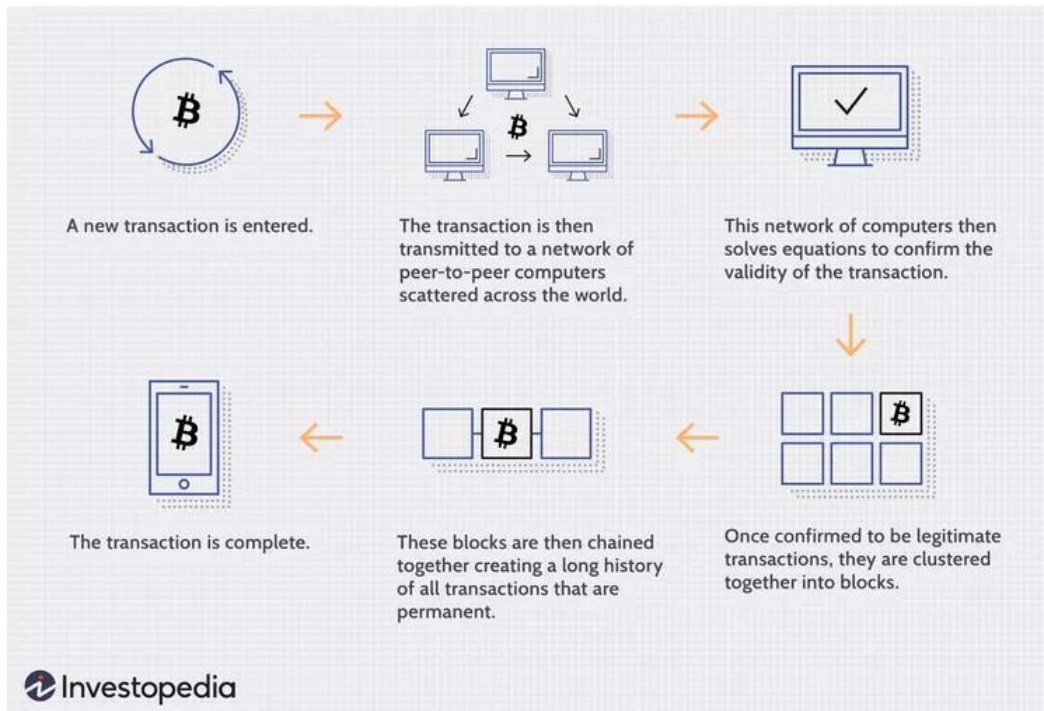


Figure 1: How a Blockchain works

**1) Public Blockchain** - This provides an open platform for people from various financial organizations like banks and backgrounds to join, transact and mine by decentralized consensus mechanisms. There are no restrictions. So they are called ‘Permission less’ blockchains. Blockchain is specific to the user without specific validator nodes. All the participants have power to write and read transactions, and perform auditing and view transactions of the blockchain.

**2) Private Blockchain** - These systems facilitate exchange of data and private sharing among a group of individuals or selected people or multiple organizations controlled by selective individuals or one organization. These blockchain systems are called permissioned Blockchain. Therefore unauthorized access can’t do, without any special permission. Each and every node maintains a copy of the ledger to reach a consensus, but unlike public blockchain the writes are restricted.

**3) Consortium Blockchain** - This blockchain system can be considered as a partially private and permissioned blockchain, not a single organization or person but a set of predetermined nodes that are responsible for consensus and block validation. Nodes decide who can join the network and mine data. . This is not a fully centralized system, but it has the ability to control some selected validator participants or peers. There are some limited abilities to read and write transactions. These nodes do not guarantee immutability and irreversibility.

## B. BLOCKCHAIN ARCHITECTURE

The Blockchain architecture consists of four concepts as decentralization, digital signature, data mining and data integrity.

- 1) **Decentralization:** Blockchain distributed control among all the participants or peers in the chain and creating a shared infrastructure.
- 2) **Digital signature:** An exchange of transactional value using public keys by the mechanism of a unique digital sign enabled by Blockchain. All the participants in the network know the code for decryption. Private keys known only to the owner to create ownership.
- 3) **Mining:** Every user in the system mines and digs data which is evaluated according to the cryptographic rules. This also acknowledges miners for confirmation and verification of the transactions.
- 4) **Data integrity:** Algorithms and agreements among participants ensure that the transaction data, once agreed, cannot be tampered [1]. Data stored in the system act as a one version for all parties while reducing risk of fraud.

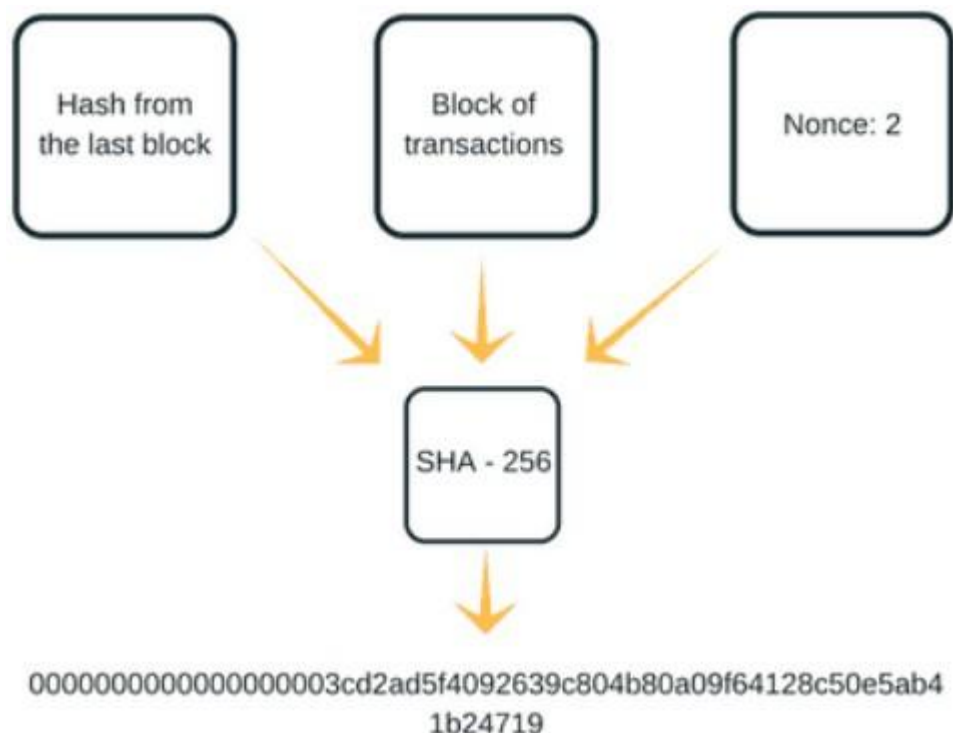


Figure 2: How the hash value create for each block

## C. BLOCKCHAIN TRANSFORMATION OF BANKING SERVICES

Blockchain technology promises a huge opportunity to recover the challenges in the banking industry. There are several use cases with advantages and limitations with blockchain technology.

1. **Payments** : These are the important use case of any financial and banking systems. Both commercial and central banks are going to use this blockchain technology for the payment process. These are important for cross border payments, without third party payments can be done very quickly. Some problems related to the cryptocurrency exchange to the local money can happen because of changes in exchange rates.

2. **Digital verification**: This can be done by removing all traditional verification systems like identity, face checking and proof of client intention by using blockchain. Blockchain provides ways to choose users who can identify them and others who like to share their identity without repeating registration for each banking service. Because of the shared ledger system, any participant can access information without permission. Therefore private information should not be added to the blockchain.

3. **Lending**: Traditional banks provide different kinds of loans. But it takes a long time. Blockchain can be used for this lending system with superfast transactions in a transparent way. Banks provide loans, KYC (Know Your Customer) and BSA (Bank Secrecy Act) and link all of them to a single consumer block. This system helps to save money and time for waiting the traditional long process.

4. **Bookkeeping, Accounting and Auditing**: Most of the traditional banks still depend on paperwork like double entry transactions and after a long process they digitize the details slowly. Banks can directly enter their transaction details into the shared ledger system . All the records are transparent and irreversible when using blockchain. This system has a feature of smart contracts which can pay invoices automatically. People who work in banks should have prior knowledge about blockchain is a considerable limitation.

5. **Crowdfunding**: This is an online raise funding mechanism by involving large numbers of people with small amounts of money. Initial Coin Offerings (ICOs) have the ability to sell

their tokens via the internet, with the decentralization advantage by using blockchain technology. This has a risk because of the legal issues in ICOs.

6. **Smart contracts:** Smart contracts are a set of code which is stored in Blockchain. These programs execute automatically when conditions are met. They perform cryptographic transactions, transparency without intermediaries because of the decentralized ledger in blockchain.

7. **KYC (Know Your Customer):** Traditional KYC processes use a lot of time to perform individually in all banks and other financial institutions. Using Blockchain, independent verification of each customer of one bank can be accessible for other banks. This process helps to eliminate duplication, reduce administrative effort and save time.

#### **D. LIMITATIONS OF BLOCKCHAIN TECHNOLOGY**

1. **High initial cost:** Blockchain saves transaction cost and time but it needs high initial capital cost.

2. **Complexity:** This technology involves entirely new vocabulary. Participants should have specialized knowledge about the technology.

3. **Network size:** Blockchain requires a large network of participants. If it is not a widely distributed grid of networks, it becomes more difficult to achieve the benefits.

4. **Transaction cost:** Transaction cost for the first few years is free. But after that there is a rising transaction cost in the network.

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1. Blockchain and bitcoin are really hard to those who are not working with technology and software development. So one of the future improvements is to build tools to make the transactions easier.
2. Storing data in the Blockchain is quite expensive so make a solution to store the data off the chain and send them to the blockchain periodically.
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## **IV. CONCLUSION**

Blockchain is a decentralized digital ledger which cannot achieve hacker's objectives. Therefore Security wise, it is a very important technology to adopt in Sri Lankan Financial industries like banks. This also helps to enhance the efficiency of the banking industry. There are a lot of opportunities with Blockchain technology with immeasurable values. This provides a unique way to establish cryptography transactions, by enabling simplification of money in the world. Giants in the banking industry started to search possible new use cases to expand their services by using Blockchain. This technology revolutionized the underlying sectors in credit information systems, payment clearing, lending systems, digital verification, audit keeping systems, crowdfunding, smart contract and KYC in banking. PBFT is the best consensus algorithm for payments and transactions. Banks used POW for digital verification because it is the best algorithm which provides better security. PBFT or BFT is mostly used for syndicated lending in the banking industry. Both PoW, Pos and DPoS are used for crowdfunding in the banking sector. Based on the type of cryptocurrency algorithms will change in smart contracts. If the cryptocurrency is Bitcoin for smart contracts most of the time we use POW. If the cryptocurrency is Ethereum for smart contracts most of the time we use POS. Most of the banks used PoW for KYC. Prospect of this technology into the banking industry will occur in the near future. When using Blockchain, there are some challenges. To solve these challenges we should provide facilities to reduce initial cost to adopt blockchain in the banking sector. System usage complexity is high. Therefore developers should reduce complexity and give prior knowledge for the users. Then we can minimize adoption and usage problems related to blockchain technology. Blockchain should develop for small scale

networks as well in future. According to the consensus algorithm power consumption can be changed. Therefore we should select the best algorithm for relevant banking service. Developers should reduce unwanted security flows and make them simpler to use. This paper gives a comprehensive review of the blockchain revolution in the banking industry. Blockchain is the next best invention after the internet. Therefore my opinion is that blockchain is a great disruptive technology which will revolutionize the banking sector in a better way in the near future.

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# Research Survey On 5g Wireless Technology

Harshita Vijayvargiya<sup>1</sup>, Parveen Kr. Goyal<sup>2</sup>

<sup>1</sup>School of Computer Application, Career Point University, Kota, India,  
Email K21545@cpur.edu.in

<sup>2</sup>Assistant Professor School of Computer Application, Career Point University, Kota, India

*Abstract- Due to revolutionary development in electronic and communication, mobile and handheld devices become the part of our daily life. As an outcome, the volume of data traffic on the Internet is increasing on a daily basis. The 5G network technology has emerged to provide these devices with infinite, unrestricted, and content-rich services. 5G is an abbreviation for fifth generation wireless technology. As the most recent global wireless standard, 5G replaces the 1G, 2G, 3G, and 4G networks. The 5G wireless technology is briefly discussed in this study.*

*Keywords: - 5G, Brief of 5G, Evolution of 5G, Need of 5G, Application of 5G*

## I. INTRODUCTION

Wireless communication first appeared in the early 1970s. In order to survive in the world where in every second the speed changes and where we urge for more and more technology, here comes the fifth generation technology known as 5G. This replaces the 1G, 2G, 3G, and 4G networks as the most recent worldwide wireless standard. With the help of 5G, a brand-new network may be created that connects almost everyone and everything, including machines, objects, and devices.

South Korea already has the first nationwide commercial 5G wireless network in the world thanks to KT Corporation. The nations that are setting the global standard for 5G technology development and deployment are South Korea, China, and the United States. In India, Prime Minister Narendra Modi introduced 5G services on October 1 at the sixth India Mobile Congress (IMC), 2022.

Fourth-generation technologies are the foundation of fifth generation. Most businesses consider potential future demands, innovations, and services that could improve humankind's quality of life. Considering this, 5G plans were developed a decade ago, even before 4G technology was available. The fifth wireless mobile internet networks will support LASCMA (Large Area Synchronized Code- Division Multiple Access), OFDM (Orthogonal Frequency-Division Multiplexing), MCCDMA (Multi- Carrier Code Division Multiple Access), UWB (Ultra-wideband), Network-LMDS (Local Multipoint Distribution Service), and IPv6. Instead of focusing on faster Internet connection speeds, 5G aims to be more capable than current 4G LTE, supporting more mobile broadband users per area unit and data consumption in gigabytes per second.

## II. LITERATURE REVIEW

**Sunil Rai (November 2015):** - "In this paper, an attempt has been made to review various existing

generations of mobile wireless technology in terms of their portals, performance, advantages and disadvantages.”

**Ramraj Dangi, Praveen lalwani, Gaurav Chaudhary, Ilsun You, Giovanni Pau (December 2021):**

- “In this paper, evaluations in the field of mobile communication technology are presented. In each evolution, multiple challenges were faced that were captured with the help of next-generation mobile networks.”

**Rupendra Nath Mitra, Dharam P. Agarwal (December 2015):** - “This paper provides an inclusive and comprehensive analysis of recent developmental endeavors toward 5G. It highlights salient features, i.e., flexibility, accessibility, and cloud-based service offerings, those are going to ensure the futuristic mobile communication technology as the dominant protocol for global communication.”

**Mr. Vinayak Pujari, Dr. Rajendra Patil, Mr. Kajima Tambe (April 2021):** - “Future 5G wireless networks will aspect new contests, as well as growing claim on network capacity to support a huge number of devices running application necessitating high data rates and always-on connectivity”.

**Ganesh R. Patil (October 2014):** - “The paper throws light on network architecture of fifth generation technology. Currently 5G term is not officially used. The main features in 5G mobile network is that user can simultaneously connect to the multiple wireless technologies and can switch between them.”

### III. OBJECTIVE

This research is mainly classified into following sections:

1. Evolution of generation 1G to 5G
2. How 5G Work?
3. Application of 5G
4. Features of 5G
5. How 5G Better than 4G?
6. Disadvantages of 5G
7. Research Group of 5G

### IV. METHODOLOGY

#### A. EVOLUTION OF 1G TO 5G

This section contains a quick review of the various wireless generations.

**A. First Generation Networks (1G):** Based on analogue technology and functioning identically like a landline phone, the 1G cell phone was introduced between the 1970s and 1980s. In 1G, modulation is performed at higher frequencies, often 150 MHz and above. Since voice calls were played back in radio towers, making them vulnerable to uninvited third-party eavesdropping, it had a low capacity, unstable handoff, bad voice connectivity, and no security at all.

**B. Second Generation Networks (2G):** The first digital system for 2G, which offered an improvement over 1G in mobile voice communication, was made available in 1991. In addition, Code-Division Multiple Access (CDMA) and Global System for Mobile (GSM) concepts were also discussed. In 2G, the maximum achievable speed was 1 Mbps.

- C. Third Generation Networks (3G):** Then, came the introduction of 3rd generation which was established in late 2000. The primary goal of the third generation (3G) system was to successfully combine high-speed mobile access with services based on the Internet Protocol (IP). Wireless web base access, multimedia services, email, and video conferencing are among the key components of 3G technology. Packet switching technology is used to send the data. Depending on mobility/velocity, 3G systems offer high data rates up to 2 Mbps, over 5 MHz channel carrier width, and great spectrum efficiency.
- D. Fourth Generation Networks (4G):** Wireless networks' Fourth Generation (4G) was standardized in 2010. The successor to the 3G and 2G standards is sometimes referred to as the Fourth Generation (4G). LTE Advanced is currently being standardized by the 3GPP as the next-generation 4G technology.
- A download speed of 100Mbps is available on 4G. The same functionality as 3G is offered by 4G, along with extra services like Multi-Media Newspapers, clearer TV viewing, and faster data transmission than in earlier generations.
- E. Fifth Generation Networks (5G):** It is Launched in 2020. Faster and reliable than 4G. It is a major phase of mobile telecommunication and wireless system. Expected speed up to 1Gbps and 10 times more capacity than other.

## **B. HOW 5G WORKS?**

The 5G network architecture shows how 5G and 4G may coexist, with local and central servers offering customers quicker content and low latency apps.

The "Radio Access Network" and the "Core Network" are the two fundamental parts of a mobile network.

**The Radio Access Network** – It consists of a variety of structures, such as tiny cells, towers, masts, and specialized inside-building and domestic systems, which link wireless devices and mobile users to the main core network. Small cells will be a major feature of 5G networks particularly at the new millimeter wave (mm Wave) frequencies where the connection range is very short. To provide a continuous connection, small cells will be distributed in clusters depending on where users require connection which will complement the macro network that provides wide-area coverage.

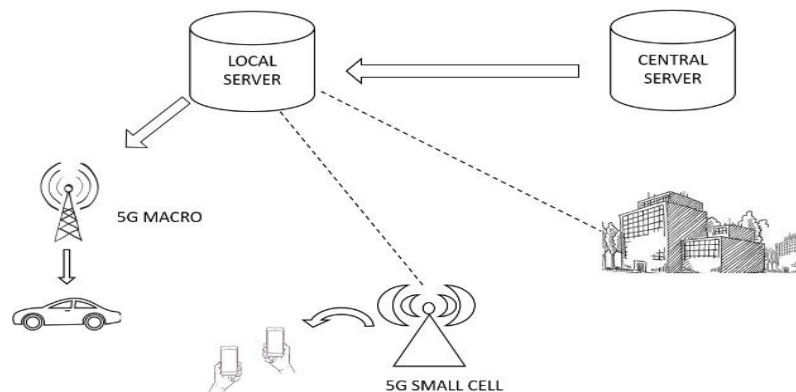
Multiple input, multiple output antennas, which feature many elements or connections, will be used by 5G macro cells to send and receive more data concurrently. The ability to connect many users to the network at once while maintaining high throughput is advantageous to users.

**The Core Network** - The mobile exchange and data network is responsible for overseeing all mobile voice, data, and internet connections. The "core network" for 5G is being modified to better interface with the internet and cloud-based applications. Distributed servers are also being added to the network to improve response times (reducing latency).

**Network Slicing** – It allows for a clever segmentation of the network for a specific sector, business, or application. For instance, emergency services might function separately from ordinary users on a

network slice.

**Network Function Virtualization (NFV)** - It is the capacity to instantly invoke network operations in the operator's cloud platform at any chosen location. Network operations that previously required specialized hardware, such as a firewall and encryption at commercial locations, can now be performed by software on a virtual machine. NFV is a key technology for a 5G ready core and is essential to enabling the speed, efficiency, and agility to support new commercial applications.



**Figure:1 5G NETWORK ARCHITECTURE**

The three separate network types that make up the 5G networking architecture will collaborate, but the three tiers of radio transmissions each have unique properties;

**Low Band 5G:** - Low-frequency spectrum, the best way to think of 5G is as a broad coverage layer. It will be a standard kind of 5G. One low band 5G tower, which transmits on the same frequency originally used for TV broadcasts, can provide service to users over an area of hundreds of square miles, including more remote areas.

**Mid Band 5G:** - Mid band 5G, which is approximately six times faster than 4G LTE, is probably going to be more prevalent in large American metropolises. In comparison to low band 5G, mid band 5G delivers service in smaller areas, and because mid band allows carriers to utilize more resources, data speeds are faster than for low band 5G.

In terms of performance and proximity to a tower, mid band 5G may prove to be the perfect tier for regular users.

**mmWave High Band 5G:** - Millimeter wave (mmWave) 5G networks, which are characterized by extremely low latency and are around 10 times quicker than 4G LTE networks, allow messages to transmit practically quickly, although they need to be close to a tower.

Higher data transfer capacities are made possible by 5G networks' usage of broader spectrum bandwidth and higher mmWave frequencies. Additionally, more devices may connect and operate more quickly the larger the spectrum is.

Even at its most fundamental level, 5G can provide faster downloads, better communications, and easier access to information, increasing company efficiency and powering applications in a variety of fields including education, smart cities, and car technology.

## **V. RESULT & IMPLEMENTATION**

### **A. APPLICATION OF 5G**

The applications of 5G are:

1. Wearable Devices with AI Capabilities.
2. Global Network.
3. Voice Over IP (VoIP) Enables Devices.
4. Media Independent Handover.
5. Radio Resources Management.
6. With 6th Sense Technology.

### **B. FEATURES OF 5G**

The features of 5G technology are:

1. High Resolution for Crazy Cell Phone Users.
2. Bi-Directional Large BW.
3. Less Traffic.
4. Downloading Speed of 5G Touching the Peek.
5. Better and Fast Solution.
6. Support Virtual Private Network.
7. More Attractive and Effective

### **C. HOW 5G BETTER THAN 4G?**

There are several reasons that 5G will be better than 4G:

1. Compared to 4G, 5G is substantially quicker.
2. Over 4G, 5G has higher capacity.
3. Compared to 4G, 5G has much less latency.
4. A unified platform with more capabilities than 4G is 5G.
5. 5G uses specialized radio frequencies to accomplish what 4G networks are unable to.

### **D. DISADVANTAGES OF 5G**

**Limited Coverage:** - The biggest drawback of 5G is that it only has local availability and has patchy worldwide coverage. Only urban areas will see significant benefits from the 5G network, and rural areas may not experience coverage for several years. Furthermore, compared to other networks, the costs associated with installing tower stations are significant.

**Week Upload Speed:** - Users of mobile phones may guarantee fast download rates thanks to 5G technologies. In contrast, compared to 4G, the upload rates are not greater than 100 Mbps. Better battery technology is also required for mobile phones when using a 5G connection. Many smart

phone users claim that when using 5G, their gadgets get hotter.

**Cyber Security Risk:** - Another negative aspect of 5G technology is that it makes cybersecurity more vulnerable to attack. The increase in bandwidth makes it simple for thieves to grab the database. Additionally, the software it employs makes it subject to attacks. Attacks are quite likely when 5G connects to more devices.

## **E. RESEARCH GROUP OF 5G**

Various research teams are developing 5G standards. These organizations are looking at various technical and standardization-related elements of 5G. Some of the groups are:

**METIS:** - METIS stands for Mobile and wireless communications Enablers for Twenty-twenty (2020)Information Society). Their research area is “Working 5G Framework”.

In order to analyze data rates during peak hours, traffic load per region, traffic volume per user, and actual client data rates, METIS concentrated on RAN architecture. They designed RAN architecture using the findings of simulations, and they published an article on METIS in February 2015.

**ETRI:** - ETRI stands for Electronics and Telecommunication Research Institute. Their research area is “Device-to-device communication, MHN protocol stack”.

ETRI is a Korean research organisation that focuses on enhancing the device-to-device communication, MHN protocol stack, and 5G network stability.

**NYU:** - NYU stands for New York University Wireless. Their research area is “Millimeter Wave”. Research on wireless communication, sensing, networking, and devices is being done at NYU Wireless. New York University is concentrating on creating more compact, lighter antennas with directional beamforming to offer dependable wireless connectivity.

**EMPhAtiC:** - EMPhAtiC stands for Enhanced Multicarrier Technology for Professional Ad-Hoc and Cell-Based Communications. Their research area is “MIMO Transmission”.

In order to build secure communication methods with a synchronicity based on a configurable filter bank and multihop, EMPhAtiC is working on MIMO transmission. Additionally, MIMO-based trans- receiver technology with frequency-selective channels for Filter Bank Multi-Carrier was recently introduced (FBMC).

**5G PPP:** - Stands for 5G Infrastructure Public Private Partnership. Their research area is “Next generation mobile network communication, high speed Connectivity”.

A combined venture by two groups launched the fifth generation infrastructure public partnership initiative (European Commission and European ICT industry). In the future decade, 5G-PPP will offer a variety of standardized designs, solutions, and technologies for the next generation of mobile networks. The fundamental idea behind 5G-PPP is that the European Commission hopes to contribute to smart cities, e-health, intelligent transportation, education, entertainment, and media through this project.

## VI. CONCLUSION

The present and upcoming generations of wireless mobile communication have been covered in this paper. Mobile, fixed, and enterprise wireless applications can all be used using 5G wireless technology, which is a multipurpose wireless network. It has all kinds of cutting-edge features that make it strong and in high demand in the near future. The next-generation wireless mobile internet networks, known as real wireless world, will support LAS-CDMA (Large Area Synchronized Code-Division Multiple Access), OFDM (Orthogonal Frequency-Division Multiplexing), MCCDMA (Multi-Carrier Code Division Multiple Access), UWB (Ultra-wideband), Network-LMDS (Local Multipoint Distribution Service), and IPv6.

Before 5G is implemented, numerous testing and trials must be carried out. 5G include latest technologies such as cognitive radio, SDR, nanotechnology, cloud computing and based on all IP Platform. The development of 5G technology is still ongoing.

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# Study of 5G Wireless Technology's and Most Promising Technologies

**Dr. Amit Sharma**

Associate Professor School of Computer Application, Career Point University, Kota, India

**Abstract-** *One way to think of the ultra-high-speed technologies that will improve cellular networks in the future is as 5G networks of the next generation. It is possible for the proposed 5G network to make use of a wide range of cutting-edge and current technologies in order to provide extraordinary services. Therefore, it is necessary to provide new architectures and service management plans for a variety of applications of developing technologies in order to address issues with data traffic capacity, high data rate, and dependability in order to guarantee quality of service. This is because developing technologies are constantly evolving. The Internet of Things (IoT), Software-Defined Networking (SDN), and Cloud Computing are all becoming more important aspects of 5G networks. Cloud-based services offer solutions for information and communications technology that are both adaptive and effective, and they do so by reducing the costs associated with the purchase and maintenance of IT infrastructure. SDN refers to software-defined networking, which is a proposed architecture that divides control planes and data planes to increase functionality. data planes that can provide programmability, adaptability, and flexibility in constantly shifting network topologies. Yet, Internet of Things integrates cloud computing and software-defined networking to create increased productivity for emerging technologies in 5G. This is accomplished by promoting contact between the human world and the physical world. The primary purpose of this research is to offer a lawless view on comprehensive works linked to enabling technologies for the future generation of mobile systems and networks, with the majority of its attention being concentrated on 5G mobile communications. Keywords: - 5G, Brief of 5G, Evolution of 5G, Need of 5G, Application of 5G.*

**Keywords:** *Device-to-Device communication, Indoor System, smart health, Cloud Computing, Big Data, Wireless Communication.*

## I. INTRODUCTION

The development of mobile communication and wireless networks is highlighted. substantially throughout the course of the previous decade. The consistently increasing due to a growth in the demand for resources, most notably for multimedia data, together with stringent standards for quality of service (QoS), has pushed for the development of wireless 3G and 4G technologies. networks. Despite this, the development has been successful in many ways.

since advancements in technology are unable to provide the appropriate level of happiness, the concept of 5G networks, which would represent networks that are more advanced than 4G has evolved into the critical need of the day. 5G networks are now available. due to the multiple obstacles that 4G must overcome, 5G came into being. networks, such as the need for a larger capacity and data transfer rate. cost reduction, end-to-end latency reduction, and enormous

interdevice connection are some of the benefits. Having said that, a thorough investigation of Information networks of the future, also known as the next generation of networks Standards and systems that have been discussed in associated forums.

is a really difficult endeavor. An analysis of the technologies that will make the next generation of mobile systems and networking possible has been completed. With this piece of writing, which gives readers an unmistakable picture of the, current state. The term "future network" may also refer to the fifth-generation mobile technology, which is abbreviated as "5G." Throughout the course of the drawn-out mobile phone technology's long and illustrious history, beginning with the upgrade to 4G LTE-A generation (Long Term Evolution Advanced), The mobile communications sector has made great strides in recent years. improvements in data communication. The next generation is able to be a technological breakthrough in mobile networks that will bring about the highest level of performance in terms of the capacity to cover ground and energy usage, data rates of one gigabit per second, and improved safety and spectral efficiency in relation to energy use in contrast to earlier networking systems. On the other hand, the wireless technology of the future generation The details of the communication network have not been precisely specified and described. Research on 5G has been under way thanks to. a great number of initiatives, organizations, and forums for standardization. Research of this kind on 5G could be steered in a certain direction by the constraints about the most recent technology.

### **1.1 The fundamental requirements for 5G are as follows:**

genuine wireless communication that is unrestricted in terms of coverage density zone, entry policy, and the boundary of the territory. Second, there is the system. should be capable of supporting multimedia with a high quality (HD) service for broadcasting. Finally, it should have higher internet rates. than the generations who came before them. In conclusion, it should be able to support new services based on gadgets that are worn on the body. Moreover, the NGN is comprised of anticipated to have huge amounts of connections between devices, which may be referred to as the Relationship Between Things. The study of 5G is now ongoing. different from that which was seen on networks of earlier generations because because there are only so many resources available in the RF range. The fifth-generation wireless standard The network's primary attention will be directed at new spectrum, multiple-input-multiple-output (MIMO) diversity, transmission access, and innovative architecture designed to maximize capacity while minimizing connection times [1].

Meeting the quality of service need is a very difficult problem to solve. @ a choice service appropriate for any network architecture. The There is a current trend toward the convergence of networking and cloud computing. the considerations that need to be made in NGNs in order to

meet the QoS need. computers in terms of its controllability, administration, and potential for optimization In the context of cloud computing, resources are the primary elements that influence the performance of the networking. One of the many benefits is that one advantage of cloud computing is that it does not need encapsulation, which implies that users may access services from any place, regardless of the host or end device that they are using. Users are able to make use of the services without gaining a grasp of how they run or how they convey data. However, The use of cloudhosting services is attracting the attention of a growing number of suppliers that are interested in information support, storage, and resource calculation. Using the more conventional web-based technologies services, the relationship between the client and the server is quite important.

impact both the quality of service (QoS) of the system and the quality of experience (QoE) [2].

As a result, wireless networks of the next generation will have to contend with many new problems always appearing. The concept of the Internet of things (IoT) due to the fact that it is predicated on the idea of has quickly become one of the most prominent technologies for the next generation of technologies.

connectivity of devices, which is a potential step toward accomplishing the necessary levels of Quality of Service and Quality of Experience. It is an illustration of an idea that cyber-physical system, often known as CPS, is a method for using embedded technology in the network of the next generation. Structures found in the physical world are merged with the computing system as well as the networking system. The scalability of the network for the next generation is dependent on the IoT system because it is a way to facilitate connections between devices. among a huge number of individual components that make up a larger system. IoT has developed into a method of communication that is not interrupted between any device and another device anywhere and at any time and time. Yet, the architecture of the Internet of Things has been called into doubt.

now, since it is very challenging to support each and every gadget in an architecture that is rigid and utilizes the conventional networking system. As a direct result of this, a number of organizations, businesses, and About the standards of the Internet of Things, committees are hard at work. to provide an original foundation for the networks of the next generation. The adaptability is essential to the growth of networking. in addition to the portability of users and the server visualization, which both play an important role key function in being able to efficiently and promptly adapt to the ever-changing demands placed on the system by applications or users. The the conventional infrastructure of network networks is continually getting outdated since it does not possess these characteristics. Moreover, Managing a network becomes practically hard due to the increased complexity that results from manually made

modifications to the settings of the network.

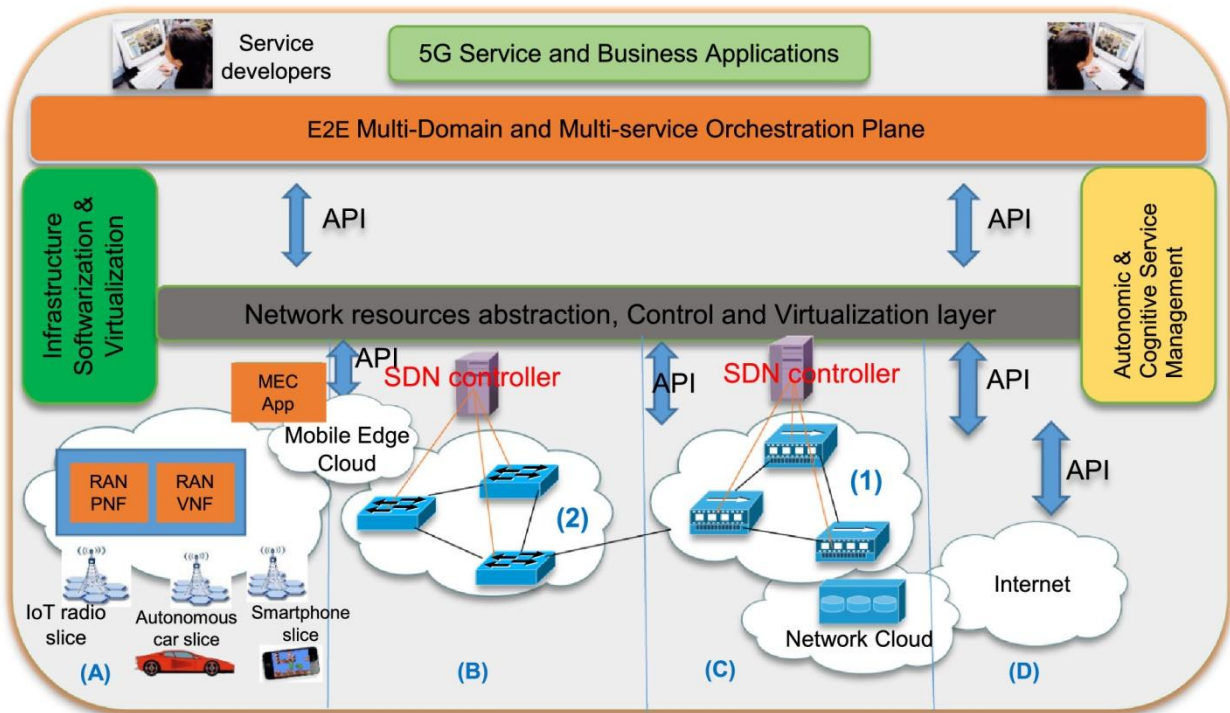


Fig. 1 Networking software in the 5G architecture. The letters A stand for RAN, B for transport networks, C for core networks, and D for the Internet.

on occasion. Due to the limitations of the existing infrastructure, priority-based packet forwarding and dynamic resource allocation are not possible. users. Thus, network management, at its basic level, has become a difficult problem to solve because of the constraints imposed by conventional networking relies on hardware, such as those that are sophisticated and setup of the network that is both expensive and resistant to changes in policy and fault management. As networking technology advance, The network must to be able to accommodate the continuously shifting Within the scope of this article, we will present an extensive analysis on the continuous study on the technology that will enable the 5G network. We provide an update on the work being done on the key technology and service models for the generation after the future generation of mobile operating systems as well as mobile network infrastructures. structured as described below. SDN is a whole new approach for controlling networks. as well as NFV is covered in Part 2, while Section 3 provides an overview of the a comprehensive examination of the cloud computing model from the perspectives of administration and management of the network. The current standing of IoT standardization, different architectural approaches, and application areas for 5G.

The fourth section covers the topic of networks. A review of mobile technology. access

networks are discussed in Section 5 of this document. The last words from us The section titled "Remarks" contains said remarks.

## 1.2 OBJECTIVES

- To find out if networking is more fastest to communication when other network compared to the 5G network.
- To understand the challenges through the network.
- To analyze different methods that can be used in networking process.
- These objectives will be attained by checking through survey analysis based on the following hypotheses as under:-
- H1:“5G network for the Internet of things is the best because most of the earlier people preferring tousing thisnetwork as it fastest network for any communication

## II. LITERATURE REVIEW

Farris [1] et.al. said that, The Internet of Things (IoT) ecosystem is evolving towards the deployment of integrated environments, wherein heterogeneous devices pool their capacities together to match wide-ranging user and service requirements. As a consequence, solutions for efficient and synergistic cooperation among objects acquire great relevance.[5] Along this line, this paper focuses on the adoption of the promising MIFaaS (Mobile-IoT-Federation-as-a-Service) paradigm to support delay-sensitive applications for high-end IoT devices in next-to-come fifth generation (5G) environments. MIFaaS fosters the provisioning of IoT services and applications with low-latency requirements by leveraging cooperation among private/public clouds of IoT objects at the edge of the network.[10] A performance assessment of the MIFaaS paradigm in a cellular 5G environment based on both Long Term Evolution (LTE) and the recent Narrowband IoT (NB-IoT) is presented. Obtained results demonstrate that the proposed solution outperforms classic approaches, highlighting significant benefits derived from the joint use of LTE and NB-IoT bandwidths in terms of increased number of successfully delivered.[7] Bego Blanco [2] et.al. discusses current standardization situation of 5G and the role network softwarization plays in order to address the challenges the new generation of mobile networks must face.[3] This paper surveys recent documentation from the main stakeholders to pick out the use cases, scenarios and emerging vertical sectors that will be enabled by 5G technologies, and to identify future high-level service requirements.

In a study published by Sunil Rai et al.[1] in 2015, in this paper has unique features of the current IoT infrastructure, with main focus on 5G mobile networks for enabling the new service requirements. In a study published by Ramraj Dangi and Praveen Lalwani et.al [2] in 2021, the paper introduced the current research state-of-the-art of 5G IoT, key enabling technologies, and main research trends and challenges in 5G IoT. In a study published by Rupendra Math Mitra and Dharam P. Agarwal [3] in 2019, in this survey the paper briefly introduced various wireless

generation, various issues and challenges in implementation of 5G networks and its solutions are discussed. In a study published by Ganesh R. Patil [4] in 2016, in this survey, they discussed the network architecture, service framework, and topologies that will play an important role to meet the requirements of future networking infrastructure that is 5G network. In a study published by Rohit Mehta in Digital Mehta, [6] in 2021, in this paper publisher surveyed 5G technology for mobile communication. Current work is in the modules that shall offer the best Operating System and lowest cost for a specified service using one or more than one wireless technology at the same time from the 5G mobile.

### **III. METHODOLOGY**

This research basically focuses on investigating upcoming 5G Wireless Communication Technology. This new technology is going to use full IP based transactions and there is a need to study the data flow in the 5G network. In this context there are unique challenges for designing, developing and deploying a simulation model of data flow in 5G using Matlab software. The four step framework is as follows:

#### **Step I.** User Background Analysis

- 5G User Device and Capability Analysis
- User Task Analysis (Videos, Data upload /download etc)

#### **Step II.** Data flow Design Conceptualization

- User Interface Design for data transactions
- Selection of data parameters based on user requirements

#### **Step III.** Iterative Prototype Implementation

- User Data flow step by step implementation
- User upload and download of data requirements for an application

#### **Step IV.** Usability Evaluation

- Evaluation of Simulation model using Matlab.
- Evaluation of Data flow needs and fulfilment.

Different case studies of Data flow such as simple, medium, huge data flow requirements can be studied. Step by step the data requirements can be simulated for complex needs like interactive and fast delivery of data for higher end applications like gaming and health industry.

**Implementation Details:** The future mobile devices are going to have very high computing and memory capabilities and will support applications that will need high data rates. The current network architecture of 4G will not be able to support these high data rates required for high end applications and this a complete architectural change is necessary. This new architecture can be seen in the 5G wireless mobile network. The 5G mobile network offers very high data rates as compared to the current 4G. The 5G also offers low power consumption and also supports global computing where the user is connected to many access technologies simultaneously like WiFi or 5G networks and the user can move from range of one

access technology to another without loss of internet access. Thus as the 5G mobile network has several advantages over 4G mobile network. The current 4G network would soon be replaced by a more flexible 5G mobile network architecture having better features and capabilities than its current counterpart.

#### IV. RESULT & IMPLEMENTATION

Network Architecture: The Fifth generation network system is all IP based network model for wireless networks and mobile networks ability. The All-IP network is capable of fulfilling all the rising demand in the market cellular communications. The Fifth Generation technology is a common platform for all radio access technologies. The All-IP network uses packet switching technique and its continuous evolution provides improved performance and cost. The Fifth Generation Architecture consist of a number of an independent, autonomous radio access technologies (RAT) and the user terminal. In Fifth Generation network architecture all-IP based mobile applications and services such as mobile banking, mobile commerce and etc, are offered through Cloud Computing Resources (CCR). Cloud computing is a model for beneficial on-demand network access configurable computing resources such as storage, servers, applications, services and networks. Cloud computing allows the users to use applications without any installation and access their personal data at any mobiles or computers with internet access.

CCR links the Reconfigurable Multi-Technology Core (RMTC) with remote reconfiguration data from RRD attached to Reconfiguration Data models (RDM). The main challenge for an RMTC is to deal with increasing different radio access technologies. The core is a convergence of the nanotechnology, cloud computing, and radio, and based on All IP Platform. Core changes its communication functions depending on the status of the network and/or user demands. RMTC is connected to different radio access technologies ranging from 2G/GERAN to 3G/UTRAN and 4G/EUTRAN in addition to 802.11x WLAN and 802.16x WMAN. Other standards are also enabled such as IS/95, EVDO, CDMA2000...etc. Interoperability process criteria and mechanisms enable both terminal and RMTC to select from heterogeneous access systems. [2,4]



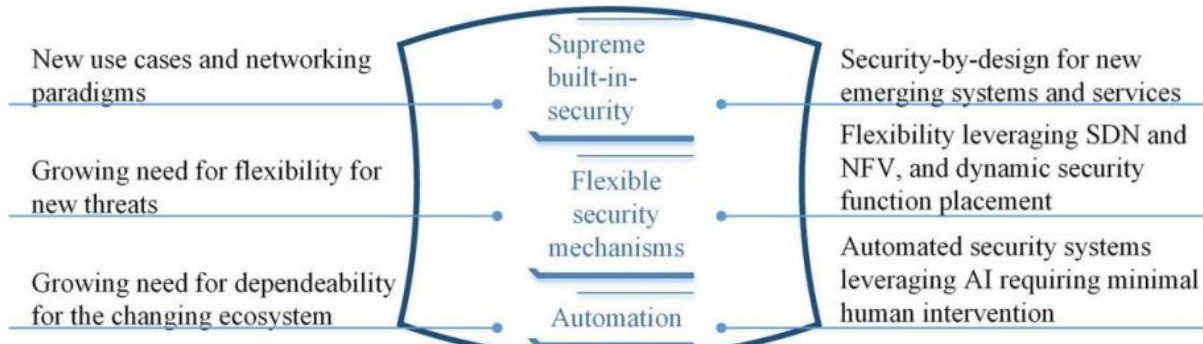


Figure 2 Vision of 5G Security

## V. CONCLUSION

In this study, we looked at 5G mobile technology. The next 5G mobile technology is designed to have several layers and be an open platform. A significant challenge will be presented to smartphones and PCs with the impending introduction of 5G technology. In the field of mobile communication technologies, from 1G, 2G, 3G, 4G, and 5G. The 5G devices will have access to many wireless technologies at once. For devoted smartphone users, 5G offers lightning-fast speeds and excellent quality. The development of 5G technology will benefit remote and rural areas. Here, we mainly focus on the challenges that 5G could face in the future. Our project aims to develop a security framework for 5G networks, implement 5G in an LTE Advanced network cost-effectively, take actions to improve QoS, and do analysis. As 5G's service and network architecture are undergoing significant changes, its characteristics and power may be enhanced if security protection and privacy are taken into account. With the capacity to manage the growing variety of heterogeneous sources and devices, the ability to safeguard user data and organizational tools, software, detection, and imaging, and other capabilities, 5G difficulties may be handled easily in the future.

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# **AI Services Implementation through Machine Learning Tools, Analyzing and visualizing the data for early Disease prediction**

**Dr. Abid Hussain**

Associate Professor School of Computer Application, Career Point University, Kota, India

*Abstract- The body's sugar levels become abnormally high over time in diabetes mellitus. Consequently, it causes damage to numerous body systems, including neurons and blood vessels. This sickness has a high guess for early location, which can assist with saving living souls. Examination of information includes acquiring and assessing information to get experiences that might be utilized for independent direction. Huge data sets and metrics are visualized using charts, graphs, and other visualizations. Data visualization and analysis will be presented in this paper, resulting in recommendations for algorithms and methods for early diabetic prediction. We used Azure plat form and Rapid Miner to comprehend the data.*

*Keywords:* - Rapid Miner, Azure, Diabetics, Machine learning, Analysis, Analytics.

## **I. INTRODUCTION**

Numerous chronic illnesses are widespread worldwide, both in developing and industrialized nations. Diabetes is a metabolic condition in which insulin levels are altered by either increasing or decreasing. [2]Human real parts, for example, the eyes, kidneys, heart and nerves are completely impacted by diabetes. As a result, we have gathered the information from the end user and a well-known pathology lab in Pune through a Google form. [3]To fully comprehend the data, we have decided to conduct data analysis and visualization prior to its actual implementation. The process of cleansing, converting, and modeling data in order to uncover information that can be used for corporate decision-making is referred to as data analysis. A decision can be made as a result of the data analysis. Data visualization is the graphic representation of data and information. By employing visual components like maps, graphs, charts, and graphs, these tools make it simpler to examine and comprehend data.

We pre-processed and visualized the data with Rapid Miner Studio and the free Azure AI service.

## **II. LITERATURE REVIEW**

Numerous businesses and academic fields have paid close attention to AI's recent significant advancements. Deep Learning (DL), a collection of processes and algorithms that automatically enable computers to automatically detect complex patterns in large datasets, is the most successful technique driven by advancements in ANNs. These advancements are fueled by more readily available computing power, user-friendly software frameworks, and increased access to data—also known as "big data," which enables the widespread application of deep neural networks. When neural networks outperformed other methods in a number of high-resolution image analysis criteria, DL gained prominence in image processing.

In 2012, a CNN model reduced the second-highest error rate in image classification work by 50% in the ImageNet Large-Scale Visual Recognition Challenge (ILSVRC) [12]. Before that, it was thought that computers had a hard time recognizing objects in natural images. In ILSVRC, CNN has even outperformed human performance to the point where ILSVRC classification is practically solved. For a variety of computer vision issues, DL techniques have emerged as the objective standard. The application of DL methods to the diagnosis of acute human diseases has been suggested by numerous studies.

Multiple scenarios based on ML and DL models have been used by researchers to predict conditions like liver disease, heart disease, Alzheimer's disease, and a variety of cancers that can only be treated early . Using pediatric chest radiographs, some researchers have used DL techniques to diagnose and differentiate bacterial pneumonia. Critical endeavors have additionally been made to recognize the various elements of chest CT imaging qualities of

different illnesses. In various studies, new hybrid models based on Case-Based Reasoning were proposed for the diagnosis of various skin diseases. The application's output from the model could diagnose and recommend treatment for a variety of skin conditions. In healthcare, personalized real-time monitoring systems based on ANN techniques are widely used to obtain vital body information. This device can assist patients with health management, particularly in critical situations. ANN models were used by researchers in to accurately predict diabetes disease.

Data is automatically analyzed using ML classification techniques to diagnose or predict various diseases. Scientists fostered a customized ongoing electronic medical services checking framework to get essential data from the body, for example, pulse or circulatory strain. This device can assist patients with health management, particularly in critical situations.

In the healthcare system, AI and the Internet of Things (IoT) can improve healthcare technology and treatment procedures. A solid IoT-based framework involving ML calculations for medical services was proposed to screen human exercises and the general climate through the body sensor organization, BSN-Care. To predict type 2 diabetes (T2D), another study suggested a hybrid IoT model that combined a healthcare monitoring system with the Random Forest method. The random forest classifier, which performed better than other algorithms, was also used to investigate the risk of T2D among individuals based on personal lifestyle information.

Using the random forest classifier, a mobile platform for real-time tuberculosis disease (TD) antigen-specific antibody detection was developed with 98.4% accuracy. Using RNN and LSTM networks, a research study with 97.057% accuracy proposed an AI-based framework for classifying multiple gastrointestinal (GI) diseases.

The two most important aspects of hypertension healthcare control and awareness are the reduction of stroke and cardiovascular disease. In this regard, researchers evaluated AI and digital healthcare technologies and suggested a privacy protection system for the collection and storage of individuals' data . In addition, numerous studies on disease prediction have been conducted by researchers to identify and anticipate diseases in their early stages. Based on the Internet of Things, a novel hybrid ML model with a precision of 99.50% and an accuracy of 100% was proposed for the initial phase of disease detection . A

method for predicting cardiovascular disease based on various characteristics has been proposed by researchers in another work. They achieved 88.7% accuracy using a hybrid random forest classifier .

An ML algorithm known as XGBoost was proposed in a study on the detection of positive urine culture results. The accuracy of this model, which was superior to that of other developed models, ranged from 0.826 to 0.904. Another Vol.: (0123456789) Discover Artificial Intelligence (2023) 3:5 | <https://doi.org/10.1007/s44163-023-00049-5> Review 1: The CNN model was used to extract features from images of malaria-infected blood cells in this study . An ML model was also used to predict malaria infection in another study. In order to identify acute exacerbations in patients with chronic obstructive pulmonary disease, researchers employed a variety of machine learning (ML) techniques, including Random Forest, Support Vector Machine, Logistic Regression, K-Nearest Neighbor, and Naive Bayes. They discovered that the SVM model performed the best. Based on data from the National Survey on Drug Use and Health from 2015 to 2017, researchers used three ML algorithms—ANN, distributed random forest, and gradient boosting—to predict opioid abuse among adolescents in other studies. The area under the receiver operating characteristic curve (AUROC) prediction performance ranges from 0.809 to 0.815. Similarly, other researchers proposed a model for detecting COVID-19 from an X-ray image dataset with 98.91 percent accuracy using multiple ML algorithms like CNN, RF, SVM, DT, and AdaBoost. Individual stress levels can be detected using ML and DL methods. One methodology is to utilize physiological signs, for example, pulse or breath,

to recognize pressure. For instance, a large study looked at various ML models based on heart rate variability for stress levels. ML Random Forest outperformed other approaches in this study. To predict diabetes, various ML models were utilized by other researchers. In their work, Calculated Relapse and Backing Vector Machines performed well. KNN, SVM, ANN, Decision Tree, Logistic Regression, Naive Bayes, Random Forest, and XGBoost were used in a comprehensive study to predict the risk of chronic type 2 diabetes. With 0.91 AUC, the Random Forest model outperformed the other models in this study. An extended DL model known as 3DCellSeg has recently outperformed basic models when it comes to analyzing and distinguishing image-based diseases. There is only one hyper parameter required for this DL approach, which uses a light deep CNN.

### III. METHODOLOGY

#### **Artificial intelligence techniques in disease diagnosis and prediction**

In order to succeed and acquire more precise knowledge regarding dangerous disorders and diseases, AI technologies are increasingly being utilized in medicine. In the medical field, AI is increasingly used for disease diagnosis and prediction due to its positive interaction with image data. The two most important tools for effectively implementing AI methods in the health care system are learning algorithms and big data derived from medical records or wearable devices. These tools can be used to improve disease diagnosis, disease classification, decision-making

processes, activities, walking aids performance, providing the best treatment options, and ultimately helping people live safer and longer lives. In a short amount of time, AI is used to improve medical analysis and diagnosis.

For instance, this technology is able to identify potentially harmful tumors in medical images, enabling pathologists to treat the disease rather than sending samples of tissues or lesions to a laboratory for long-term research. Unencoded, rare, and undiagnosed patients can all be successfully identified using AI-based algorithms. As a result, AI models for disease diagnosis afford patients ample opportunities for early diagnosis.

The use of ML and DL strategies to analyze heart illnesses is expanding fundamentally. In cardiology, there is a wide variety of medical imaging techniques, such as CT, ECG, and echocardiography, so DL can be used to analyze and review cardiovascular data accurately and effectively. Common cardiovascular disease with severe disability and morbidity is coronary atherosclerotic heart disease. This disease can be detected early, which has a significant impact on treatment. In this period, the diagnosis of coronary atherosclerotic heart disease has made significant progress using ML and DL methods. For instance, a powerful tool for predicting major adverse cardiac events would be CT-Fractional Flow Reserve (CT-FFR) based on ML, which can speed up diagnosis and reduce time [81, 82]. Additionally, CT-FFR based on the DL can simplify computation, speed up prediction, and reduce time. In 170 patients, researchers used SVM and ANN techniques to identify various heart conditions early [85]. SVM and ANN models were used to investigate CHD, CAD, arrhythmia, and cardiomyopathy. For arrhythmia, cardiomyopathy, coronary heart disease, and coronary artery disease (CAD), the SVM algorithm achieved an accuracy of 89.1%, 80.2%, 83.1%, and 71.2 percent, respectively. In a similar vein, the accuracy of the ANN algorithm for CAD, cardiomyopathy, arrhythmia, and CHD was 69.6%, 72.7%, and 85.8%, respectively. The South African Heart Disease dataset of 462 samples was used in another study to predict coronary heart disease (CHD). They used Naive Bayes, Support Vector Machine, and Decision Tree supervised learning methods to diagnose CHD and boost its prediction rate. In their study, the accuracy of the library data for cardiovascular diseases was 83.9 percent, while the accuracy of the library data for diabetes was 95.7 percent. The SVM classifier outperformed other ML methods in predicting CHD with 95 percent accuracy, according to another study. In addition, another group of researchers looked into the ability of SVM, ANN, and Decision Tree algorithms to predict CHD disease in 502 samples. With an accuracy of 92.1%, SVM outperformed the other two algorithms in these three accuracy tests. The widespread applications of AI in the medical field have also enabled precise diagnosis and prediction of brain diseases.

The diagnosis of various brain and neurodegenerative diseases like Alzheimer's disease (AD), Parkinson's disease (PD), and brain tumor, which has always been very difficult to detect in the early stages, is where the most recent ML and DL approaches are used. Man-made intelligence has made it conceivable to process and examine an enormous measure of mind cues and information to find

bits of knowledge and connections which are not totally clear to the natural eye. The most broadly involved calculation for infection

identification is DL-based CNN models. Pre-trained models for predicting and detecting Alzheimer's disease were the subject of a recent study. In this review, the EfficientNetB0 model beat different models and got a precision of 92.98%. A blend of various simulated intelligence calculations was utilized for the early finding of Parkinson's sickness as of late.

With an accuracy of 95.58 percent, the combination of the genetic algorithm and random forest produced the best result, making it the best result in recent research in this area. Advanced AI algorithms also greatly aid in early breast cancer detection and prediction. Breast cancer is a disease that kills a lot of women and kills millions of people every year. However, early diagnosis is essential for treating and controlling the condition. The Wisconsin Bosom Disease Dataset (WBCD) is a broadly utilized dataset for specialists researching ML techniques to analyze bosom disease. WBCD was successfully used to diagnose breast cancer with the least-squares support vector machine (LSSVM) algorithm, which achieved a classification accuracy of 98.53% . On the WBCD, a hybrid fuzzy-artificial immune system with a k-nearest neighbor algorithm was also proposed, and its classification accuracy was 99.14 percent. The feature selection was combined with the SVM algorithm.

#### **IV. RESULT & IMPLEMENTATION**

The diseases and their respective accuracy levels that the patient is currently suffering from will be the outcome of the developed system. The degree of accuracy for a particular disease will be determined by a variety of factors, including the patient's age, gender, and medical history, when the data are analyzed in accordance with the steps of the Knowledge Discovery process depicted in Figure 2.2. The clinical doctors will benefit from the outcome of the subsequent data mining in order to enable them to treat patients with greater accuracy for specific diseases.

By simply entering the user's health data and symptoms, a health prediction system will enable doctors and medical staff to reduce the amount of effort they need to put into their clinical decision-making process. The system will use data-mining algorithms to cleverly deduce the patient's disease by correlating the patient's information with the health information provided by doctors and medical professionals and stored in a database. This would effectively cut down on the amount of time doctors spend making clinical decisions and the difficult work they have to do. The system will also help doctors and patients talk to each other by pointing them to doctors who are right for their diagnosis and relevant to their particular medical fields.

The goal of this project is to create a system that is easy for patients and doctors to use for diagnosing illnesses and providing appropriate guidance for their current health issues. PCs will be the only platforms for which the software can be installed.

**The following features must be included in the proposed system:**

4.1 Patient Registration To use the system, patients would need to sign up for the first time using their username and password.

4.2 Patient Access:

Patients would need to use their username and password to access their system.

4.3 Viewing Patient Details In order to familiarize themselves, doctors and patients may view each other's details.

4.4 Disease Prediction Answer multiple questions and use data mining to identify the most accurate symptoms to identify the illness or diseases that the user is attempting to describe.

4.5 Search Doctors and Patients Patients and doctors can search for each other by specialty, diseases they've been diagnosed with, and other references.

4.6 Providing Inputs

Specialists and patients might give input that might act as an extra data to be seen.

4.7 Adding New Diseases and Symptoms Administrators have the ability to add new diseases and symptoms to the system so that patients and doctors can look at them.

4.8 Doctor Login To use the system, doctors must log in using their username and password.

4.9 Administrators could add a new doctor to the system, register them, and give them a username and password.

4.10 Administrator Login Doctors must use their username and password to access the system.

4.11 View Diseases The system's database provides administrators with access to a variety of disease-specific information.

4.12 Sharing Data

Specialists could share data of a sickness or patient to one more specialist for confirmation.

**V. CONCLUSION**

The diagnosis and prediction of diseases could be completely transformed by DL and ML methods. The most important aspect of the treatment process is the accuracy and correctness of the disease diagnosis. AI has demonstrated significant accuracy in both the prediction of treatment outcomes in terms of survival rate and treatment response and the detection of image-based diseases. The huge amount of picture information requires execution into handling stages through prompt, solid, and precise processing power given by computer based intelligence strategies. Issues like detection accuracy, effective treatment, and ensuring patients' well-



being are crucial in disease diagnosis.

The vast and varied data, algorithms, deep computing techniques, a variety of neural networks, and emerging techniques that AI encompasses are constantly evolving to meet the requirements of humans. The purpose of this study is to examine how well AI methods work for diagnosing and predicting various diseases. The results of this study indicate that SVM performs best in predicting heart diseases. Due to their high accuracy and quick image recognition, supervised DL networks, such as CNN-based models, are widely used, particularly for diagnosing respiratory, lung, skin, and brain diseases, with significant results. When diagnosing breast cancer, KNN and other networks, like SVM, are typically combined to produce high accuracy. Because of their impressive experimental results in detecting and classifying medical images, DL and ML have a significant impact on the success of numerous diseases that are the subject of this study. By optimizing the utilization of various resources, AI-based methods aid medical systems in diagnosing and predicting conditions. Also, doctors won't have to struggle as much in the near future to make an accurate diagnosis of various diseases thanks to the rapid advancement of AI technologies.

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