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Dual Notch Triangular Slotted Wearable Antenna For Bio Medical Application

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Abstract—Customers these days like products that are very portable and do not need a lot of effort to carry about. As a result, in order to satisfy the requirements of customers, a broadband flexible antenna that has broadband properties has been created for a variety of wireless applications and low power IoT devices, and it has been implemented on a flexible substrate. The antenna that has been described here is quite small, and it has a wide frequency range, operating from 3.79 to 9.68 GHz. The planned antenna will have a resonant frequency of 4.896 Gigahertz. The highest directivity of the antenna, as calculated by simulation, is 3.086 dBi. The antenna that is being exhibited has a broadband width of 87.45%. Since the planned antenna will have a modest profile, it will be particularly well –suited for use in applications related to the internet of things.

Index Terms: Wide Band, Jeans Material, Gain, Directivity

I.INTRODUCTION

Because of their adaptability and small size, flexible antennas find most of their uses in the medical and telemedicine fields. This is due to the fact that the antennas themselves are flexible. Because of their relatively high gain and bandwidth, small antennas play an important part

in the area of satellite communications as well as mobile communications. Applications of the internet of things are responsible for the most significant advancements in the area of current communication systems. It is essential that the devices used for effective and dependable communications be small in size, have low or no production costs, a broad bandwidth, and high energy efficiency. The applications of LTE, WLAN, and Wi-MAX are particularly well suited to IOT devices that are available today. As the number of people living in the globe continues to expand at an exponential rate, there will be a greater need for devices that are both small and flexible, as well as lightweight antenna modules. The efficiency and dependability of the systems may be improved by using the tiny devices that include these modules[1-3].

The frequency range that is covered by the flexible antenna that is used in communications equipment is from 2.5-2.69 GHz. In addition, it is anticipated that modern antenna design will be flexible enough to enable independent control of bandwidth. Certain well-known procedures, including as the line feed technique, the CPW feed technique and the installation of slots in the structure, have been employed in order to satisfy the conditions that

were specified before. Literature highlights the employment of meta -material and complementary split ring resonator methods in addition to these traditional procedures in order to produce greater gain and minimize cross-frequency interference. In their research , employed a magneto-electric dipole antenna, which they showed had a broad impedance width and enhanced gain. Unfortunately, such cross-magneto-electric structures are not appropriate for mass manufacturing in the internet of things due to their size and sensitive design constraints they impose(IoT). In the research that has been done, a great number of CPW-fed antennas, such as multiband [13-20] and CPW antennas with an extra strip for WLAN have been recorded . on the other hand ,the vast majority of these designs does not cover all of the essential bands of the spectrum and have very large antennas.

II. ANTENNA DESIGN PROCEDURE

The antenna that is being shown has a low profile and is rather small size, measuring 49 mm by 43.6 mm. After computing the length and breadth of the rectangular substrate , the dimensions that are acquired are put to use in order to provide a broad bandwidth. In this particular piece of research , the line feed approach is used in order to get relatively big bandwidth and gain .The CST programme is used for modeling and simulation of the suggested antenna, which delivers broad band width in oprating range from 3.79 -9.68 GHz. This May be achieved by using the aforementioned range. Table I presents the designs parameters for your perusal. In terms of improving the antennas parameters , the ground plane in the antenna design is the component that plays the most important function. In most designs, the ground plane is limitless; however , a large section of it was eliminated in this one and as a result, we achieved both increased bandwidth and directivity[4-12].

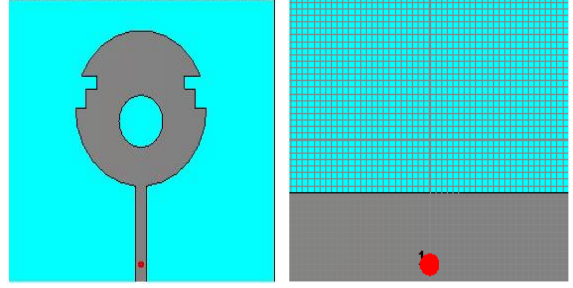


Fig.I Front view of proposed antenna and back view of proposed antenna

TABLE I. DESIGNED PARAMETERS OF PRESENTED ANTENNA

Parameter	Value(mm)
Length(L)	49.0
Width(W)	13.8
Length(L)	49.0
Width(W)	43.6
Patch Radius(R)	12.0
Inner Radius(r)	4.0
Feed Length(L)	13.8
Feed Width(W)	2.0

III. RESULTS AND DISCUSSIONS

In most cases, the ground plane will be far larger than the patch. Yet, a ground plane that is effectively limitless in size cannot be manufactured. The ground plane should be unlimited. it is recommended that a trade –off be made between the size of the antenna and its performance in order to get greater radiations performance and a bigger bandwidth. figure 1 demonstrates a low profile slotted flexible antenna that was constructed using CST software. The wide band widths of 87.45% have been attained, as can be seen in figure II, both of which make this point quite evident. Figure III illustrates that the predicted flexible antenna

has a maximum directivity of 3.086 dBi at 4.896 GHz. This result may be seen in the figure IV. Figure IV presents the 3D radiations pattern, a graphical depictions that shows maximum directivity.

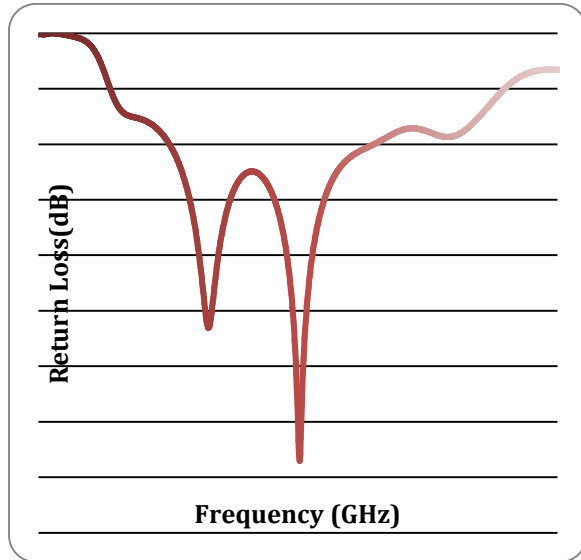


Fig. II Reflection Coefficient vs. Frequency

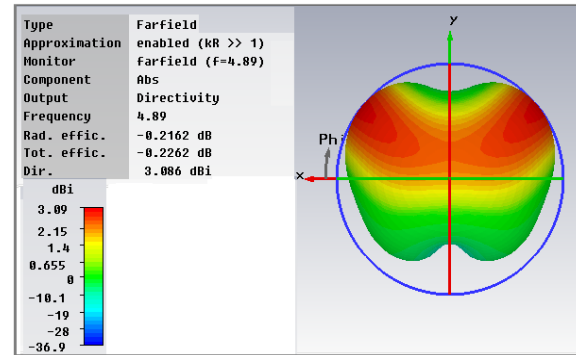


Fig. IV 3D Radiations Pattern at 4.896 GHz

IV. CONCLUSION

It has been suggested and realized that an unique broadband flexible antenna with rounded edges be used. In order to achieve a broadband width of 87.45%, a semicircular slot was included into the patch. In order to boost antenna gain, a method known as partial ground is used to produce broad bandwidth ranging from 3.79 GHz to 9.68 GHz. Radiation pattern, of these modifications. The expected antenna has a small footprint and a broad bandwidth, both of which make it well suited for biomedical applications.

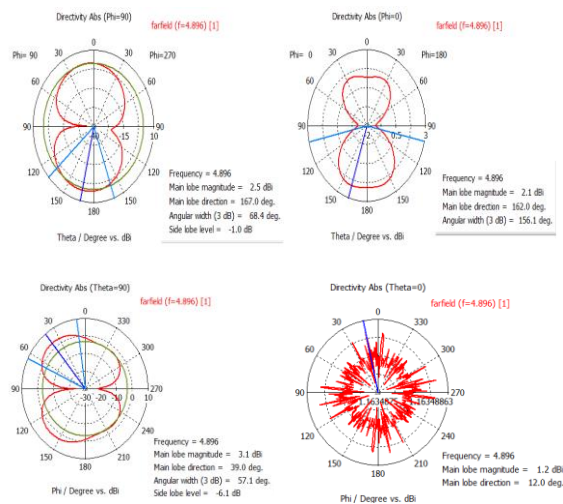


Fig. III 2D Radiation Pattern at 4.896 GHz

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Factor Affecting Customer Loyalty in Titan Store: with Reference to Chhattisgarh State

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Abstract - This research aims to create and verify a conceptual model that considers the linkages between service orientation and customer loyalty in the Chhattisgarh state's Titan store environment. A self-structured survey was used to gauge consumer loyalty at the World of Titan store under investigation. Data was gathered with the aid of 500 respondents who met the research's inclusion requirements. For the sake of the study, a distinct Titan store planet was selected. Collecting data using a purposeful sampling approach. Customers who appreciate their services highly at the World of Titan store in the state of Chhattisgarh are more likely to stay loyal to the company.

Index Terms- customer satisfaction, customer loyalty, customer loyalty

I. INTRODUCTION

A clock, which is larger than a watch, is usually intended to be kept in one place; a watch is designed to be carried or worn. Today human begins work with time. The several tasks that must be completed are typically prescribed based on the time factor. Time is therefore regarded as a more relevant aspect in all spheres of life. In 276 cities and towns, there are currently more than 1,480 World of Titan showrooms exclusive stores, totaling more than 1.9 million square feet of retail space. The company-managed showrooms act as flagship shopping destinations created to provide clients the best of what Titan has to offer. This offers the buyer the full

brand experience, making it the most popular location to purchase the most popular watch from.

II. REVIEW OF LITERATURE

(A) Relationship between Customer Satisfaction and Customer Loyalty: - One of the studies determined the effect of retail shop format on the satisfaction-loyalty relationship. It was conducted on a sample of 505 shoppers from supermarkets and hypermarkets in Spain. According to their findings, consumer happiness is positively related to client loyalty. They went on to say that trust should have a positive and immediate impact on both attitudinal and behavioural loyalty, and that it should be reciprocal [1].

Mediation effects of perceived value and customer satisfaction between value-related advantages were determined in the research. Intangible (physical atmosphere of restaurant, food quality, staff assistance) factors that have been proven to have favorable correlations with customer satisfaction and customer loyalty are those that customers are most drawn to (e.g., staff support) [2,3].

(B) Relationship Between Perceived Value and Customer Loyalty: - There exist relationships between customer loyalty, perceived value, and service quality in Indonesia's boutique hospitality industry. The client's sense of value is one of the key factors in the Indonesian market that contributes to customer loyalty. By boosting

the standard of guest service, the hotel's image, and the perceived value of their institution, boutique hotel managers can develop market-driven tactics to draw in guests [4].

customer loyalty and value are related, as well as the moderating effect of ethical reputation. 427 instances in all were included in the study. The results show that customer value positively affects customer satisfaction and loyalty, and that ethical reputation favourably affects the relationship between customer value and satisfaction [5].

A study was conducted in the hotel and tourism industries of Indonesia to develop an alternative to the pervasive usage of customer loyalty programmes. 444 hotel guests from three- and four-star hotels contributed to making it happen. It has been demonstrated that elements like customer satisfaction, perceived value, and service quality have a major impact on attitudes about loyalty. Consumer perceived value and overall customer satisfaction are significantly correlated in the Indonesian tourism and hospitality industry [6].

A favourable connection between consumer perceived value and customer loyalty has been shown. The academic research conducted [7, 8].

(C) Relationship Between Customer Trust and Customer Loyalty: - In their 2020 study [9] sought to understand how customer loyalty is impacted by interpersonal trust in Cameroon's second-tier microfinance institutions. The results of the survey led to the creation of 372 valid questionnaires in total. The results show a direct, positive relationship between interpersonal trust and the four pillars of customer loyalty. According to the study, there is an all-encompassing positive association between interpersonal trust and customer loyalty (cognitive, affective, conative and behavioural loyalty).

On 357 E-services clients in the Malaysian and Qatari e-commerce industries, research [10] was conducted. This article provides crucial insights into how word-of-mouth (WOM) is a significant predictor of repeat business or repurchase intentions, as well as how customer satisfaction and trust have a significant impact on loyalty. The results of this study show that trust has a significant influence on consumer loyalty. Trust is anticipated to be a major motivator of customer

relationship commitment or loyalty because it has a positive and strong relationship with their online service providers.

Trust is a crucial component of customer loyalty. It supports the empirical theory put forth by [11-15].

(D) Relationship Between Reputation and Customer Trust:- In research using 529 respondents on how reputation fosters loyalty in the restaurant industry, was later published in the journal *Organization Science*. Their findings suggest that the growth of a company's reputation is influenced by consumer trust and perceived value. Another intriguing result is that, even while consumer satisfaction, perceptions of trust in a company, and the importance of those perceptions all play a role in the creation of a firm's reputation, other crucial aspects may also have a substantial effect on customer retention [16].

In their article from 2012, The impact and connections between company image, satisfaction, and commitment on customer loyalty in the New Zealand travel industry. According to the findings of the experts, consumer happiness in turn has a big impact on customer loyalty [17].

To ascertain the importance of business reputation, customer happiness, and pleasure when deciding consumers' loyalty,

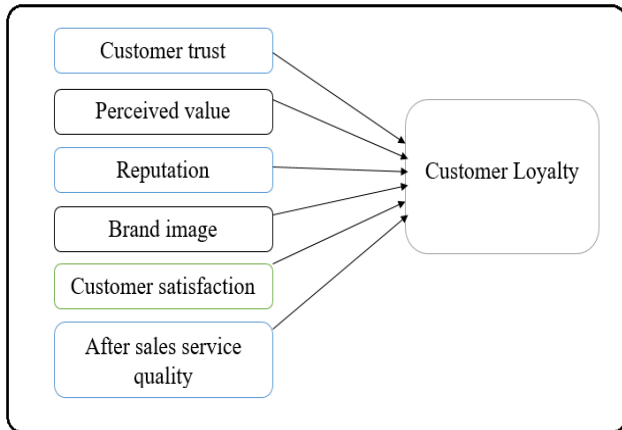
A research which was conducted on 448 visitors in Portugal using a modified RURALQUAL model. The reputation of the rural hotel accommodations unit is by far the most crucial component when assessing consumer loyalty to a remote lodging unit. The reputation of a corporation has a direct impact on customer satisfaction and customer loyalty [18,19].

(E) Relationship Between Service After Sales and Customer Satisfaction: - As a result of their research, a method for determining how after-sales services affect customer satisfaction was developed, and it is being utilized by other researchers. In order to categorize different components of consumer satisfaction, numerous models were applied (Kano model and SERVQUAL model). 243 consumers of automotive after-sales services were subjected to additional analysis utilizing the RFM (Regency, Frequency, and Monetary Value) clustering technique. According to the study's findings, after-sales service has a positive effect on

customer satisfaction. Businesses will be able to spend their resources more efficiently in the future according to the findings of this study [20].

In particular, the study seek to ascertain the link between customer satisfaction and after-sales services in the context of Chennai, India's automobile industry and the factors that influence customer satisfaction. 71 individuals helped with the information collection. The results showed that the majority of respondents were males between the ages of 21 and 30 who drove or rode a bicycle. The results show that consumers' overall happiness is influenced by both the promptness of service and the cost of after-sales care [21].

In 2015, A research was performed on after-sales services (ASS) and customer satisfaction. (CS). In Delhi, India, where they performed their research, they focused on comprehending the intricacy of after-sales providers as well as their influence on the mobile phone market. The results of the investigation showed that customer after-sales services at mobile phone retailers were more successful. Customer satisfaction has been demonstrated to have an inverse but positive link with the effectiveness of after-sales services (ASS) (CS)[22].



“Figure I Conceptual framework of the study”

III. RESEARCH METHODS

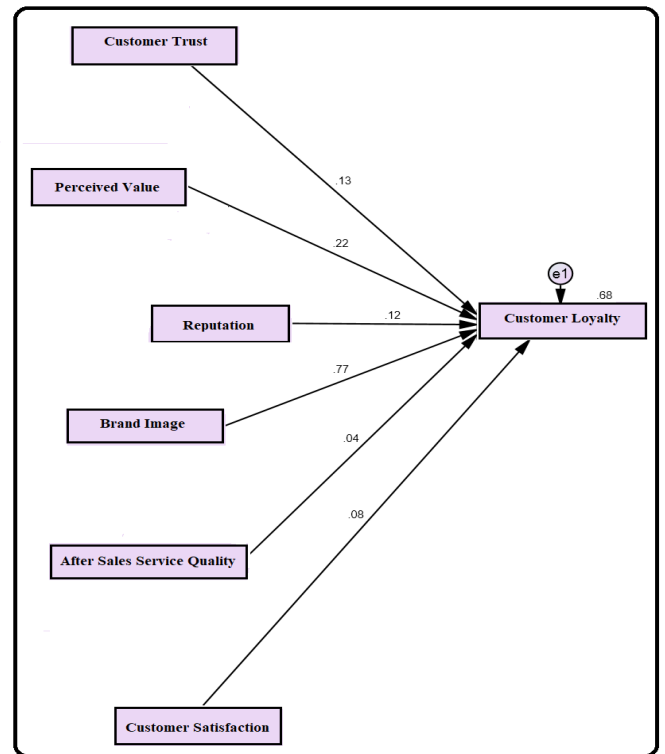
State of Chhattisgarh residents who had purchased any watches from World of Titan were the study's target audience. The individual customer served as the sampling unit. A systematic questionnaire schedule created with input from subject-matter experts was used to conduct the study. This was pre-tested by three

professional managers from the World of Titan, whose knowledge was used to finalize the questionnaire timetable. 500 people took the survey. Only 414 samples were used for the investigation after 86 were excluded due to response mistake. For this study, convenience sampling was employed.

IV. TOOLS AND TECHNIQUE

SPSS 25 was used for descriptive statistics, and AMOS to examine the proposed model. AMOS is a powerful statistical tool that is generally used for conducting confirmatory factor analysis (CFA) and structural equation modeling (SEM).

V. DATA ANALYSIS AND DISCUSSION



“Figure II Regression analysis weight on customer loyalty”

Table I: Factor affecting customer loyalty

Variables	Estimate	S.E.	C.R.	P
Customer Loyalty <--- Customer Trust	0.078	0.011	7.355	***
Customer Loyalty <--- Perceived Value	0.194	0.016	12.132	***
Customer Loyalty <--- Reputation	0.107	0.016	6.602	***
Customer Loyalty <--- Customer Satisfaction	0.693	0.016	43.36	***

Brand Image				
Customer Loyalty <--- After Sales Service Quality	0.031	0.013	2.387	0.017
Customer Loyalty <--- Customer Satisfaction	0.082	0.017	4.766	***

Result shows that all the predictor variables positively impacted customer loyalty and was found to be statistically significant. Dimensions like customer trust ($\beta = .131$, $t = 7.355$, $p < 0.01$), perceived value ($\beta = .216$, $t = 12.132$, $p < 0.01$), reputation ($\beta = .118$, $t = 6.602$, $p < 0.01$), brand image ($\beta = .772$, $t = 43.36$, $p < 0.01$), after sales service quality ($\beta = .043$, $t = 2.387$, $p < 0.05$) and customer satisfaction ($\beta = .085$, $t = 4.766$, $p < 0.01$) explained 68% of variance in customer loyalty. As a result, all of the elements contributed favorably to explain the loyalty factors.

VI. CONCLUSION

This study examined the relationship between a brand's reputation and consumer loyalty, with customer happiness and brand awareness serving as intermediaries. For the research study, all of the brands were used as the subject. Based on the research, it has been determined that brand image significantly affects client loyalty. However, the data show that consumer satisfaction and brand awareness have an impact on brand image and customer loyalty. The majority of the respondents were qualified young people. This study also highlighted how respondents were mostly influenced by their preferences for the brand and quality, which created a strong positive association between brand perception and product fidelity. In the end, it is the consumer's delight that spurs interest in using the product and particular brand. In the relationship between brand image and consumer loyalty, brand awareness is also a key factor. Customers will favor a unique product over a generic one.

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ई-सूचना स्रोत एवं सेवाएँ पं. सुन्दरलाल शर्मा विश्वविद्यालय एवं गुरु घासीदास विश्वविद्यालय : एक तुलनात्मक अध्ययन

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परिचय –

सूचना सेवाएं पुस्तकालय में उपलब्ध सूचना स्रोतों एवं उपयोगकर्ताओं के मध्य स्थानांतरण का माध्यम होती है। किसी पुस्तकालय में प्रदान की जाने वाली सूचना सहायता की गुणवत्ता इस बात पर निर्भर करती है, कि उसमें कितनी गुणवत्ता परक सेवा प्रदान की जाती है। ताकि विकास कार्यों में परीक्षित कर सके। किसी भी पुस्तकालय एवं सूचना केन्द्र से प्रदान की जाने वाली सेवाओं में मूलतः उपयोगकर्ता को उत्कृष्ट पाठ्य सामग्री प्रदान करना, उपयोगकर्ता हेतु पर्याप्त सहयोग है। इन उद्देश्यों के पूर्ति हेतु यह आवश्यक है, कि समय-समय पर मूल्यांकन करना, नई सूचना सेवाओं के माध्यम से हम उपयोगकर्ताओं की सूचना सन्तुष्टी को और अधिक बढ़ा सकेंगे। मूल्यांकन के पश्चात् सभी चिन्हित की गयी सूचना सेवाओं को उचित समय पर पुस्तकालय में क्रियान्वित भी किया जाना चाहिये[1]। पुस्तकालय में प्रदत्त विभिन्न सूचना सेवाओं का विस्तार से वर्णन किया जाता है। सेवाओं में विभिन्न प्रकार के सेवाओं का समावेश होता है। उत्तरदायी सेवा, परामर्श सेवा, समसामायिक जागरूकता सेवा, चयनात्मक सूचना प्रसार सेवा, सूचना प्रसार सेवा, सभी सूचना सेवाओं पर प्रौद्योगिकी का प्रभाव होता है। पुस्तकालय में उपलब्ध इन समस्त सूचना स्रोतों के प्रचुर उपयोग एवं उपयोगकर्ता से इनके बीच दूरी को कम करने का कार्य पुस्तकालय में प्रदत्त सेवाएं करती है। दूसरे शब्दों में कहा जाए तो सूचना सेवाओं की

विविधता एवम् गुणवत्ता ही पुस्तकालय की सफलता की मूल कुंजी है। 21वीं सदी में समाज के लिये बड़ी चुनौती सूचना को खोजने, लागू करने और मूल्यांकन करने के लिये आवश्यक ज्ञान और तकनीकी विशेषज्ञता के साथ तालमेल बिठाना है। हम इस प्रकार के उभरते इलेक्ट्रॉनिक सूचना युग में रह रहे हैं जहां हर कोई त्वरित और आसान तरीके से जानकारी को इंगित करना चाहता है। पुस्तकालय की तकनीकी प्रगति के कारण सूचना केन्द्र इलेक्ट्रॉनिक संसाधनों की ओर बढ़ रहे हैं। जो कम खर्चीले और आसान पहुँच के लिये अधिक सहायक पाए जाते हैं। इंटरनेट और वर्ड वाइड वेब दुनिया भर से इलेक्ट्रॉनिक सूचना संसाधनों के लिये विद्वानों को त्वरित और आसान पहुँच प्रदान करता है। इलेक्ट्रॉनिक संसाधन एक बहुमूल्य उपकरण है। जो पारंपरिक पुस्तकालय सेटिंग में प्रिंट आधारित संसाधनों का पूरक है। बदलते परिवेश और पुस्तकालय स्वचालन के कारण आज इलेक्ट्रॉनिक संसाधन के उपयोग में वृद्धि की मांग है यह शैक्षणिक संस्थानों में अधिक प्रभावी है। हववहसमे युग में संसाधन, पुस्तकालय पेशवरों के साथ-साथ पुस्तकालय उपयोगकर्ता के लिये एक वरदान बना है।

शब्द संकेत-ई-सूचना, प्राथमिक स्रोत, संदर्भ सेवा, पुस्तकालय।

सूचना का अर्थ एवं परिभाषाएँ –

सूचना शब्द को परिभाषित करना कठिन कार्य है। उनके समानार्थी शब्द भी सूचना के लिये प्रयुक्त होते रहे हैं, जैसे

तथ्य, ज्ञान आंकड़े आदि व्यापक अर्थ में सूचना से अभिप्राय है, जो किसी विशेष तथ्य, विषय अथवा घटना से संबंधित है, तथा किसी भी स्वरूप में संप्रेषणीय हो वर्तमान में सूचना के अन्तर्गत ग्राफ, चित्र आदि का भी समावेश होता है। विभिन्न विद्वानों ने सूचना की परिभाषा इस प्रकार दी है:-

- (1) **कन्साईज ऑक्सफोर्ड डिक्शनरी के अनुसार** – सूचना का अर्थ सूचित करना, कहना, बताई गई बात, ज्ञान की अनेक वांछित वस्तुएँ, समाचार आदि होता है।
- (2) **वेबस्टर डिक्शनरी ऑफ इंग्लिश लैंग्वेज के अनुसार** – सूचना से आशय किसी भी प्रकार से संग्रहित अध्ययन अथवा शिक्षण द्वारा ग्रहण की गई उन खबरों अथवा बौद्धिक अवधारणाओं से है जो लिखित अथवा मौखिक रूप से तथ्यों, आंकड़ों (कंज) अथवा ज्ञान पर निर्भर है।
- (3) **ई.जे. इवान्स के अनुसार** – किसी तर्क संगत कथन, राय, तथ्य विचार या विचारों के संग्रह को सूचना कहते हैं। इन सभी सूचनाओं को जब संगठित कर एकत्रित किया जाता है, तो यही सूचना ज्ञान का आधार बनती है। जब सूचना मस्तिष्क में जगह बना लेती है तो वह विज्ञान बन जाती है। उपरोक्त परिभाषाओं के आधार पर हम कह सकते हैं, कि सूचना का अभिप्राय उन तथ्यों, आंकड़ों (कंज) तथा ज्ञान से है। जो अध्ययन अथवा शिक्षण द्वारा ग्रहण कि जाए, जो प्राप्त अथवा संप्रेषित हुए है।

सूचना स्रोतों के प्रकार (Type of Information Sources)

आधुनिक पुस्तकालयों में विभिन्न प्रकार के प्रलेख उपलब्ध होते हैं। इस प्रलेखों को विभिन्न समूहों में श्रेणीबद्ध किये

जाने का प्रयास किया जाता है और यह उनके विशेषताओं पर निर्भर होती है, इनको प्रलेखित एवं अप्रलेखित दो भागों में बांटा गया है। अध्ययन की दृष्टि से पुस्तकालयों में प्रलेखित सूचना स्रोतों को उनमें निहित जानकारी के आधार पर बांटा गया है[2]। यह इस प्रकार है। सूचना स्रोत प्रलेखीय –

अ) प्राथमिक सूचना स्रोत –

- (1) पत्रिकाएँ
- (2) शोध प्रतिवेदन
- (3) सम्मेलन कार्यवाही
- (4) एकस्व
- (5) औद्योगिक एवं व्यावसायिक साहित्य
- (6) शोध प्रबंध.

ब) द्वितीयक सूचना स्रोत –

- (1) सारकरण पत्रिकाएँ
- (2) अनुक्रमणीकरण
- (3) प्रगति समीक्षा
- (4) संदर्भ ग्रंथ
- (5) विषय ग्रंथ
- (6) ग्रंथ सूची.

स) तृतीयक सूचना स्रोत –

- (1) निर्देशिका
- (2) वार्षिकी
- (3) साहित्य मार्ग दर्शिकाएं
- (4) शोध प्रगति सूची
- (5) ग्रंथ सूचियों की ग्रंथ सूची.

सूचना स्रोत एवं सेवाओं की आवश्यकता और महत्व –

आधुनिक सूचना काल में सूचना का महत्व इस प्रकार बढ़ गया है कि सूचना न केवल साधन बल्कि वस्तु का रूप ग्रहण कर चुकी है। कौन सी सूचना एकत्र

करना, कैसे एकत्र करना, उसकी तैयारी कैसे करना, उसका प्रयोग किस प्रकार करना है आदि बातें सूचना स्रोत कि आवश्यकता बढ़ाती है। पुस्तकालयों में विभिन्न प्रकार के पाठको जैसे विद्यार्थी, अध्यापक, वैज्ञानिक शिल्प, वैज्ञानिक योजनाकार, नितिकार, आदि की सूचना स्रोत आवश्यकता बढ़ रही है। मानव इतिहास एवं विकास को संजोने के साथ अध्ययन एवं अनुसंधान में सूचना एवं संदर्भ स्रोतों कि भूमिका अत्यंत महत्वपूर्ण है। आज सूचना एवं संदर्भ स्रोत ज्ञान की व्यापकता, शिक्षा के प्रसार, नई-नई वैज्ञानिक खोजों, उच्च स्तरीय खोज पूर्ण सामग्री की प्रचुरता, सार्वभौमिक संपर्क नये पुराने अभिलेखों और सामायिक प्रकाशनों की जानकारी तथा शोधार्थियों एवं अध्येताओं के समय की बचत करने में अत्यंत ही सहायक सिद्ध हो रहे हैं। सूचना स्रोत विभिन्न प्रकार के विलुप्त हो रहे ज्ञान को अभिलेखित कर संजोने में महत्वपूर्ण भूमिका निभाते हैं[3]। सूचना स्रोत के माध्यम से सूचनाओं को एक स्थान से दूसरे स्थान तथा अनुसंधानकर्ताओं पाठकों एवं वैज्ञानिकों को उपलब्ध कराकर सूचना स्रोत का प्रसार किया जाता है ताकि उपयोगकर्ता को कोई भी परेशानी न हो। वर्तमान युग सूचनाओं का युग है। जिसमें सूचना की समृद्धि देश की समृद्धि से सीधे संबंधित है, सूचना आवश्यकता कि पूर्ति में सूचना एवं संदर्भ स्रोतों का अत्यंत ही महत्वपूर्ण योगदान है। सूचना स्रोतों के अभाव में कोई भी व्यक्ति अपने जीवन में उचित मार्गदर्शन प्राप्त नहीं कर सकता है। विज्ञान एवं प्रौद्योगिकी के क्षेत्र में तेजी से हो रही प्रगति के कारण नई-नई सूचनाओं का उत्पादन हो रहा है। इन नवीन सूचनाओं को उपयोगकर्ताओं तक सूचना स्रोत ही पहुंचाने एवं उन्हें अद्यतन रखने में सहायता करते हैं। सूचना स्रोत ज्ञानार्जन एवं उसकी वृद्धि में सहायक होते हैं। सूचना के अनेक स्रोत हैं तथा मुद्रण कला के अविष्कार के पूर्व श्रुति ही सूचना के प्रमुख स्रोत थे। परंतु आज अनेक

प्रकार के सूचना स्रोत द्वारा उपयोगकर्ता के ज्ञान में वृद्धि एवं कार्य कुशलता बढ़ाने में सहायता मिलती है।

क्रिया विधि (प्रविधि) –

किसी भी अनुसंधान के लिये आवश्यक वास्तविक तथ्यों को एकत्रित करने के लिये काम में लाये गए निश्चित प्रमाण सिद्ध तरीकों को प्रविधि कहते हैं[4]। प्रस्तुत अध्ययन शोध लेख वर्तमान स्थिति पर आधारित है तथा अध्ययन, खोज सर्वेक्षण पद्धति के माध्यम से किया गया है। प्रस्तुत अध्ययन शोध के लिये पं. सुन्दरलाल शर्मा विश्वविद्यालय एवं गुरु घासीदास विश्वविद्यालय से डेटा एकत्रित किया गया है। प्रस्तुत अध्ययन के लिये आंकड़ा संकलन, आंकड़ों का गठन करने के लिये एक संरचित प्रश्नावली तैयार करके उसका प्रयोग किया है। ई-सूचना स्रोत एवं सेवाएँ पर आधारित संरचित प्रश्नावली तैयार करके पुस्तकालयाध्यक्ष से भरवा कर आंकड़ों का संकलन करके अनुसंधान प्रयोजन के लिये उपयोग किया गया है। प्रश्नावली तैयार करते समय कुछ मुद्दों पर विचार किया है। प्रश्नावली में कुल 47 प्रश्न पूछे गये हैं।

- (1) अध्ययन हेतु पुस्तकालय का कुल संग्रह
- (2) ई-सूचना स्रोत के औसत उपयोगकर्ता
- (3) ई-सूचना स्रोत के प्रकार
- (4) पुस्तकालय द्वारा प्रदान की जाने वाली इलेक्ट्रॉनिक सेवाएँ संकलित किया गया डेटा का विश्लेषण और अर्थ निर्वचन करने के लिये सांख्यिकी परिमानों से प्रतिशत निकाला गया है।

डेटा (DATA) विश्लेषण और अर्थ निर्वचन जाँच परिणाम –

डेटा विश्लेषण करने के लिये पं. सुन्दरलाल शर्मा विश्वविद्यालय एवं गुरु घासीदास विश्वविद्यालय से प्राप्त किये हुए आंकड़ों की जाँच की गई है। इन दोनों विश्वविद्यालय में क्या अन्तर है यह देखकर निष्कर्ष पर पहुंचें हैं।

**I. तालिका क्रमांक –
पुस्तकालय के कुल संग्रह का विवरण**

क्रं.	कुल संग्रह	गुरु घासीदास विश्वविद्यालय	पं० सुन्दरलाल शर्मा विश्वविद्यालय	अन्तर
1.	किताबें	1,72, 319	15,150	1,571 69
2.	जर्नल	105	64	41
3.	पी-ए च.डी. शोधलेख	1571	256	1315
4.	ई-बुक	9420	104	9316
5.	सी.डी. रोम टाईटलस	1200	114	1086

ऊपर दिये तालिकाओं से यह अन्तर दिखाई देता है कि पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय में पुस्तकालय का कुल संग्रह किताबें 1,57, 169, जर्नल 41, पी-एच.डी. शोध लेख 1315, ई-बुक 9316, सी.डी. रोम टाईटलस 1086 अंको से ज्यादा है।

**II. तालिका क्रमांक
ई-सूचना स्रोत के औसत उपयोग कर्ता का
वार्षिक वितरण**

स्रोत	उपयोग कर्ता	गुरु घासीदास विश्वविद्यालय	पं० सुन्दरलाल शर्मा विश्वविद्यालय	अन्तर
ई-बुक, ई-जर्नल, ई-डाटाबेस,	स्टाफ	1100	900	200
	छात्र	18400	16200	2200

ई-आनलाईन, न्यूज पेपर, ई-सूचना स्रोत, ई-लेक्चर	शोध कर्ता छात्र	4800	3600	1200
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ऊपर दिये तालिकाओं से यह अन्तर दिखाई देता है कि पं० सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय में ई-सूचना स्रोत के वार्षिक औसत उपयोगकर्ता स्टाफ 200, छात्र 2200, शोधकर्ता छात्र 1200 ज्यादा है। यह सिद्ध होता है।

**III. तालिका क्रमांक
ई-सूचना स्रोत के प्रकार के अनुसार
उपयोगकर्ता का प्रतिदिन वितरण**

ई-सूचना स्रोत के प्रकार	गुरु घासीदास विश्वविद्यालय	पं० सुन्दरलाल शर्मा विश्वविद्यालय	अन्तर
प्रलेखीय सूचना स्रोत	618	522	96
अप्रलेखीय सूचना स्रोत			

ऊपर दिये तालिकाओं से यह अन्तर दिखाई देता है कि पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय का ई-सूचना स्रोत के प्रकार के अनुसार उपयोगकर्ता का प्रलेखीय एवं अप्रलेखीय सूचना स्रोत का प्रतिदिन वितरण 96 अंकों से ज्यादा है।

IV. तालिका क्रमांक

ई-पुस्तकालय में आई.सी.टी. इंफ्रास्ट्रक्चर में उपलब्ध सुविधाएँ

ई-पुस्तकालय में आई.सी.टी. इंफ्रास्ट्रक्चर	गुरु घासीदास विश्वविद्यालय	पं० सुन्दरलाल शर्मा विश्वविद्यालय	अन्तर
कम्प्यूटर	100	05	95
प्रिन्टर	05	01	04
स्केनर	03	01	04

ऊपर दिये तालिकाओं से यह अन्तर दिखाई देती है कि डॉ. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय के ई-पुस्तकालय में आई.सी.टी. इंफ्रास्ट्रक्चर में उपलब्ध सुविधा में कम्प्यूटर सुविधा कम्प्यूटर संख 95 अंको से, प्रिन्टर 04 अंकों से तथा स्केनर भी 04 अंकों से ज्यादा है।

V. तालिका क्रमांक

पुस्तकालय द्वारा प्रदान की जाने वाली इलेक्ट्रॉनिक सेवाएँ

पुस्तकालय द्वारा प्रदान की जाने वाली इलेक्ट्रॉनिक सेवाएँ	गुरु घासीदास विश्वविद्यालय	पं० सुन्दरलाल शर्मा विश्वविद्यालय
आदान-प्रदान सेवा	√	√
संदर्भ सेवा	√	√
डाटा बेस सेवा	√	√
वाई-फाई सेवा	√	√

इस तालिका से यह निष्कर्ष निकल रहा है कि दोनों ही विश्वविद्यालयों में

आदान-प्रदान सेवा, संदर्भ सेवा, डाटा बेस सेवा एवं वाई-फाई सेवा समान रूप से प्रदान की जा रही है।

निष्कर्ष

- [1] प्राप्त किये गए आँकड़ों से यह सिद्ध होता है कि पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय का पुस्तकालय का कुल संग्रह अधिक है।
- [2] ई-सूचना स्रोत के औसत उपयोगकर्ता का वार्षिक वितरण पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय का अधिक पाया गया है।
- [3] प्राप्त किये गए ई-सूचना स्रोत के प्रकार के अनुसार प्रतिदिन उपयोगकर्ता पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय के अधिक है।
- [4] प्राप्त किये गये आंकड़ों से यह सिद्ध होता है कि पं. सुन्दरलाल शर्मा विश्वविद्यालय से गुरु घासीदास विश्वविद्यालय में आई.सी.टी. इंफ्रास्ट्रक्चर के अन्तर्गत उपलब्ध सुविधायें अधिक है।
- [5] प्राप्त आंकड़ों से यह स्पष्ट होता है कि दोनों विश्वविद्यालयों में दी जाने वाली सेवायें लगभग समान है।

संदर्भ

- [1] लाल मदन, सिंह रजनीकांत, "ई इनफॉर्मेशन लाइब्रेरी एमग रिसर्च स्कॉलर आफ गुरु घासीदास विश्वविद्यालय ए सर्वे : इंटरनेशनल जर्नल ऑफ लाइब्रेरी एंड इनफॉर्मेशन स्टडीश" खण्ड-7. पृष्ठ 50-52, सितंबर 2017।

- [2] शर्मा अरविन्द कुमार, "सूचना सम्प्रेषण एवं सूचना समाज", पृष्ठ 26–30, 2008 ।
- [3] शर्मा अरविन्द कुमार, "शोध प्रविधियाँ एवं सूचना प्रौद्योगिकी", पृष्ठ 66–68, 2008 ।
- [4] त्रिपाठी डॉ. एस. एम., "संदर्भ एवं सूचना सेवा के नवीन आयाम", पृष्ठ 20–23, 1993 ।

नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि का अध्ययन

¹अनुराधा उपाध्याय, ²डॉ. पार्वती यादव

¹शोधार्थी, शिक्षा, डॉ. सी. व्ही. रमन् विश्वविद्यालय कोटा, बिलासपुर (छ.ग.)

²सहायक प्राध्यापक (शिक्षा-विभाग), डॉ. सी. व्ही. रमन् विश्वविद्यालय कोटा, बिलासपुर (छ.ग.)

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सारांश – महिलाओं के जीवन परिवर्तनों से भरा रहता है जिनका उनके जीवन-संतुष्टि पर बहुत प्रभाव पड़ता है। अतः महिलाओं के जीवन-शैली तथा जीवन-संतुष्टि में भिन्नता पाई जाती है। महिलाओं के प्रतिदिन की दिनचर्या जीवन-संतुष्टि का स्तर ऐसे तथ्य हैं जो अनेक कारकों द्वारा प्रभावित होते हैं। प्रस्तुत शोध में सर्वेक्षण विधि का प्रयोग किया गया है। प्रस्तुत शोध में बिलासपुर शहर के शासकीय तथा अशासकीय उच्चतर माध्यमिक विद्यालयों को चुना गया। जिनमें से 150 नौकरी करने वाली तथा 150 नौकरी नहीं करने वाली माताओं को लिया गया। प्रस्तुत शोध में शोध उपकरण एस.के. बावा तथा एस. कौर द्वारा निर्मित जीवन-शैली उपकरण और प्रोमिला सिंह तथा जार्ज जोसेफ द्वारा निर्मित जीवन-संतुष्टि उपकरण का प्रयोग किया गया। हमारी परिकल्पना अस्वीकृत हुई है। अतः नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-शैली अंतर पाया गया।

शब्द संकेत – जीवन, जीवन-संतुष्टि, स्तर जीवन-शैली।

I. प्रस्तावना :-

शिक्षा एक ऐसी प्रक्रिया है जिसके द्वारा जीवन का सच्चा आनंद लिया जा सकता है। अतः बालक को सुखी सम्पन्न तथा प्रसन्न जीवन का आनंद लेने योग्य बनाना है तो शिक्षा के संकुचित तथा व्यापक दोनों ही अर्थों का समन्वय

करना होगा। दोनों अर्थों के प्रगतिशील समन्वय सीमित हो जाने से शिक्षा एक ऐसी प्रक्रिया के रूप में बालक के व्यक्तिगत रुचियों, क्षमताओं तथा सामाजिक आदर्शों को ध्यान में रखते हुए आवश्यकतानुसार स्वतंत्रता प्रदान करके उसका बौद्धिक, सामाजिक, सांस्कृतिक तथा आध्यात्मिक विकास करती है एवं उसके व्यवहार में इस प्रकार से परिवर्तन करती है कि व्यक्ति तथा समाज दोनों ही उन्नति के शिखर पर चढ़ते रहें [1]।

वर्तमान युग में समाज में व्यापक रूप से शिक्षा का प्रचार प्रसार हुआ। स्त्री शिक्षा को महत्व दिया जाने लगा है। महिलाओं ने जो शिक्षा के माध्यम से ज्ञान प्राप्त किया उसका सदुपयोग के लिये एवं आर्थिक आत्मनिर्भरता के लिये एवं प्रतिष्ठित पद प्राप्त करने के लिये उनकी आकांक्षाएं बढ़ी। जिसके फलस्वरूप शिक्षा प्राप्त कर डॉक्टर, अध्यापिका, आई. ए. एस., इंजीनियर, गर्वनर, एयरहोस्टस, मंत्री ही नहीं बल्कि प्रत्येक क्षेत्र में कार्य कर समाज में मान बढ़ाया। जीवन संतुष्टि को व्यक्ति का व्यक्तित्व मूल्य, उम्र, धर्म, संस्कृति, परिवार, समाज, शिक्षा, भावनायें, कार्य, व्यवसाय प्रभावित करते हैं। दैनिक जीवन में प्रत्येक मनुष्य लक्ष्य प्राप्ति के लिए प्रयासरत होता है। लेकिन यह आवश्यक नहीं कि वह अपने प्रत्येक प्रयास में सफलता प्राप्त करे, यदि वह अपने प्रयासों में सफल होता है तो वह एक प्रकार की आत्मिक संतुष्टि अनुभव करता है यही आत्मिक संतुष्टि जीवन संतुष्टि होती है [2]।

व्यक्ति का प्रत्येक कार्य या प्रयास उसकी जीवन संतुष्टि की दिशा की ओर उन्मुख रहता है क्योंकि जीवन संतुष्टि ही मानव का आधारभूत लक्ष्य एवं अंतिम आकांक्षा होती है।

जीवन संतुष्टि

‘जीवन संतुष्टि से आशय महिलाओं का अपने व्यवसाय, अपने परिवार एवं समाज के उत्तदायित्वों के प्रति अपनी कार्य अभिवृत्ति एवं रुचियों के प्रति अपने स्वास्थ्य एवं सामाजिक आर्थिक स्तर के प्रति सन्तुष्टि से है [3]।

इसलिए महिलाओं का शिक्षित होना बहुत आवश्यक है। वर्तमान परिप्रेक्ष्य में यह बात सर्वमान्य है कि स्त्री को भी पुरुषों के बराबर शिक्षा प्राप्त करने का अधिकार होना चाहिए। शिक्षा के द्वारा महिलायें अपने अन्य अधिकारों की रक्षा कर सकती हैं। शिक्षा प्राप्त करके महिलायें अपने परिवार, अपने संतानों को भी शिक्षित कर सकती हैं। महिला शिक्षा गरीबी पर काबू पाने में एक महत्वपूर्ण कदम है। आज हम नारी सशक्तिकरण की बात करते हैं जो केवल शिक्षा द्वारा ही संभव है। महिलाओं की शिक्षा किसी भी पुरुष की शिक्षा से कम महत्वपूर्ण नहीं है। महिला शिक्षा को बढ़ावा देकर एक अच्छे समाज की स्थापना की जा सकती है। कोई देश तब तक तरक्की नहीं कर सकता जब तक उस देश की महिलायें शिक्षित न हों। महिलाओं के शिक्षित होने का सीधा संबंध उनकी आत्मनिर्भरता से है ताकि वह दूसरों पर आश्रित न रहे व स्वयं अपने अनुसार जीवन व्यतीत कर सकें। वर्तमान परिप्रेक्ष्य में अधिकतर महिलायें जो किसी न किसी रूप में घर से बाहर जाकर काम कर रही हैं व आत्मनिर्भर हैं। किंतु कुछ ऐसी महिलायें भी हैं [4]। जो शिक्षित होने पर भी परिस्थितियां अनुकूल न होने के कारण घर से बाहर जाकर काम नहीं करती हैं। इन दोनों प्रकार की महिलाओं की जीवन-संतुष्टि में अंतर पाया जाता है [5]। नौकरी नहीं करने वाली महिलाओं को पारिवारिक वातावरण में रहकर ही अनेक समस्याओं का सामना करना पड़ता है। विभिन्न समस्याओं का सामना करते हुए वे स्वयं को इन परिस्थितियों के अनुकूल ढलने का प्रयास करती हैं। जिसके

कारण कहीं न कहीं उनकी उनकी जीवन-संतुष्टि का प्रभाव दिखाई देता है।

II. समस्या कथन –

नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि का अध्ययन।

III. अध्ययन का औचित्य –

किसी भी समस्या पर शोध करने से पूर्व उसकी आवश्यकता तथा महत्व को जानना अत्यन्त आवश्यक है क्योंकि उस शोध से प्राप्त परिणाम केवल शोधकर्ता को ही नहीं अपितु उस क्षेत्र से संबंधित सभी व्यक्तियों को प्रभावित करते हैं। अतः प्रत्येक समस्या पर कार्य करने से पूर्व यह जानना जरूरी है कि उस शोध से प्राप्त परिणाम उस क्षेत्र तथा उससे संबंधित व्यक्तियों को कैसे और किस हद तक प्रभावित करेंगे। शैक्षिक क्षेत्र में जब कोई अनुसंधान किया जाता है तब वह अनुसंधान स्वयं अनुसंधानकर्ता के लिये नहीं अपितु शैक्षिक क्षेत्र में संबंधित सभी व्यक्तियों के लिये होता है। अतः प्रत्येक समस्या पर कार्य करने से पूर्व यह देखना उचित है कि अनुसंधान के परिणाम शैक्षिक जगत व उसके व्यवहार को किस प्रकार प्रभावित करेंगे। इस शोध में उपर्युक्त समस्याओं पर विचार करते हुए तथा पूर्व में किए गए शोधों के आधार पर यह विचार किया गया कि अभी तक नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-शैली तथा जीवन-संतुष्टि इन दोनों चरों को लेकर अध्ययन नहीं किया गया। इस कारण से इस शोध की महत्ता बढ़ जाती है।

V. अध्ययन का उद्देश्य :-

- नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के दबाव लेना आयाम का तुलनात्मक अध्ययन करना।

IV. अध्ययन की परिकल्पनाएँ :-

Ho₁ नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के दबाव लेने आयाम में सार्थक अंतर नहीं पाया जाएगा।

VI. अध्ययन की परिसीमन –

अध्ययन की परिसीमन से आशय, अध्ययन हेतु निश्चित क्षेत्र से है। जिस क्षेत्र के अंदर इस शोध कार्य को संपादित करना है। इस शोध के लिए बिलासपुर जिले के माध्यमिक स्तर के आठवीं के शासकीय एवं अशासकीय विद्यालयों के छात्र-छात्राओं का चयन किया गया है।

शोधार्थी के अध्ययन हेतु –

क्षेत्र – शोधार्थी ने अध्ययन हेतु बिलासपुर जिले का चयन किया।

■ एस.के. बावा तथा एस. कौर द्वारा निर्मित जीवन-शैली उपकरण का प्रयोग किया गया।

■ प्रोमिला सिंह तथा जार्ज जोसेफ द्वारा निर्मित जीवन-संतुष्टि उपकरण का प्रयोग किया गया।

IX. सांख्यिकी गणना :- प्रदत्तों के संकलन के पश्चात् उनकी प्रकृति के आधार पर उचित सांख्यिकी विधि का चयन किया गया है।

X. आंकड़ों का विश्लेषण एवं व्याख्या :-

S.No.	जीवन-संतुष्टि के मानसिक आयाम	N	Mean	SD	SED	T	df	Significance level	Interpretation
1	नौकरी करने वाली	150	28.75	8.94	1.02	3.50	298	0.05= 1.97	Ho 9 Rejected
2	नौकरी नहीं करने वाली	150	25.17	8.95				0.01= 2.60	

विद्यालय – शोधार्थी ने अध्ययन हेतु अशासकीय एवं शासकीय को चयन किया।

स्तर – शोधार्थी ने अध्ययन हेतु माध्यमिक स्तर (कक्षा आठवीं) को चयन किया।

शोध विधि :- प्रस्तुत शोध में सर्वेक्षण विधि का प्रयोग किया गया है।

VII. जनसंख्या तथा न्यादर्श :-

संक्षेपिका के निर्माण के समय यह निर्धारित किया गया है कि बिलासपुर शहर के शासकीय तथा अशासकीय उच्चतर माध्यमिक विद्यालयों को चुना गया। जनसंख्या के रूप में इन विद्यालयों में अध्ययनरत विद्यार्थियों की माताओं को लिया जायगा। समंको के संग्रहण के समय डाटा की उपलब्धता तथा अनुपलब्धता के आधार पर न्यादर्श की संख्या घटाई या बढ़ाई जा सकती है। वर्तमान में 150 नौकरी करने वाली तथा 150 नौकरी नहीं करने वाली माताओं को लिया गया।

VIII. शोध उपकरण :-

निम्नलिखित उपकरण का प्रयोग किया गया है :-

Ho₁ नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के मानसिक आयाम में सार्थक अंतर नहीं पाया जाएगा।

Table-I

नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के मानसिक आयाम

व्याख्या:

सारणी क्रमांक-I से ज्ञात होता है कि-नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के मानसिक आयाम के आधार पर प्राप्त किये गये मध्यमान क्रमशः 28.75 तथा 25.17 है वहीं प्रामाणिक विचलन क्रमशः 8.94 तथा 8.95 है । मध्यमानों में अंतर की सार्थकता जांचने के लिए t- मूल्य परीक्षण किया गया। गणना से प्राप्त t का मान 3.50 है। df= 298 के लिए t का सारणी मान 0.05 के सार्थकता स्तर पर 1.97 एवं 0.01 के सार्थकता स्तर पर 2.60 है। t का प्राप्त मान t के सारणी मान से 0.05 तथा 0.01 दोनों ही सार्थकता स्तरों पर अधिक है।

निष्कर्ष—अतः हमारी परिकल्पना क्रमांक - 1 नौकरी करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं की जीवन-संतुष्टि के मानसिक आयाम में सार्थक अंतर नहीं पाया जाएगा।

अस्वीकृत होती है।

XI. निष्कर्ष :-

शोधकर्ता द्वारा वर्तमान समय के एक महत्वपूर्ण विषय को लिया गया है। नौकरी

करने वाली एवं नौकरी नहीं करने वाली विवाहित महिलाओं के तनाव, अवसाद, जीवन-संतुष्टि आदि महिला वह हीरा है जो दो घरों को रोशन करती है। जब कोई महिला शिक्षित होती है तो वह स्वयं आत्मनिर्भर बनने का प्रयास करती है। किसी भी महिला की आत्मनिर्भरता सिर्फ सुदृढ़ीकरण देने की पहल की

सोच नहीं अपितु यह उसके आत्मविश्वास को बनाए रखने का अहम बिंदु है। महिलाओं के शिक्षित होने का सीधा संबंध उनकी आत्मनिर्भरता से है ताकि वह दूसरों पर आश्रित न रहे व स्वयं अपने अनुसार जीवन व्यतीत कर सके। वर्तमान परिप्रेक्ष्य में अधिकतर महिलायें जो किसी न किसी रूप में घर से बाहर जाकर काम कर रही हैं व आत्मनिर्भर हैं। किंतु कुछ ऐसी महिलायें भी हैं। जो शिक्षित होने पर भी परिस्थितियां अनुकूल न होने के कारण घर से बाहर जाकर काम नहीं करती हैं। इन दोनों प्रकार की महिलाओं की जीवन-शैली तथा में अंतर पाया जाता है। कुछ महिलायें अपनी जीवन शैली को लेकर संतुष्ट रहती हैं तो कुछ असंतुष्ट।

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The Standard of Living of the Tribal's has been Changed A Little in Keeping With the Women Education at Gaurella Tehsil, Chhattisgarh

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Abstract: Scheduled tribe population is 6.8% of the total population of India. Man is changing himself in the aspects of human life. The lifestyles of the tribal population have been changed a little with time. There is a slight change in their diet, residential place and political view. Tribal people are increasingly relying on the government instead of self-reliance. At the same time, the total literacy rate has increased, but not women education and literacy.

Index Terms: Tribes, population growth, agriculture, literacy rate, Mitani

I. INTRODUCTION

“Education is the most powerful weapon which you can use to change the world.”-Nelson Mandela. Tribals are the oldest inhabitants of India. Their lifestyle has changed a slightly in the last few decades but the rate of education has not been changed so much. The tribal's are trying hard enough to keep up with modern civilization. There is a contribution of women behind the change of their lifestyle. Nowadays, they are moving from their remote villages to urban areas for treatment, education and earning. There is an inter-relation between women education and social change.

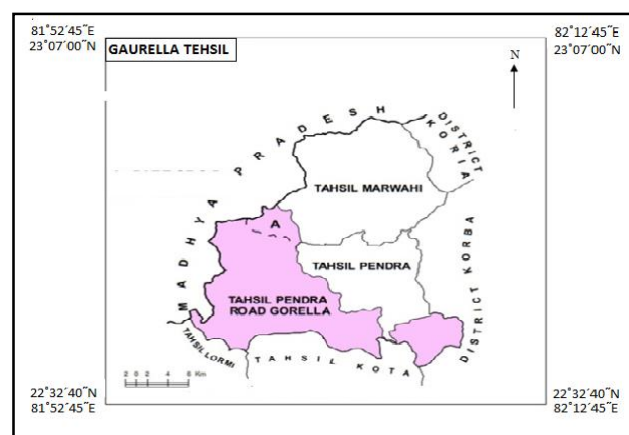
II. OBJECTIVES

- To know the reason for the lack of tribal women's education.
- To describe different types of socio-economic changes of their lifestyle.
- To suggest some suitable plan for women's education.

III. STUDY AREA

Gaurella is situated in the north-western part of newly born Gaurela-Marwahi-Pendra district. Gaurella, Marwahi and Pendra, these three tehsil were carved out from Bilaspur district and existence as 28th district of Chhattisgarh on 10th February 2020, named Gourela-Pendra-Marwahi. The newly formed district is situated in the western part of Chhattisgarh. Gaurella tehsil is bounded by Marwahi tehsil in the north-east, Pendra tehsil in the east, kota tehsil and Mungeli district in the south and Madhy Pradesh in the west. The district is situated along 22°44'55"N latitude and 81°54'43"E East longitude. Total area of the tehsil is 527.88 square kilometers.

Map I. Gaurella Tehsil



IV. DATA BASE AND METHODOLOGY

This is to say that the lifestyle of the tribal has changed a lot, in the last few decades but women's education is not improved much at Gaurella tehsil, Chhattisgarh. The present study is based on census 1991, 2001 and 2011. The secondary data has been collected from the office of the Land Record of Bilaspur, District Statistical Handbook and District Census Handbook of Bilaspur. The calculation has been done through quantitative method. According to multi-stage sampling the researcher selects one of the tribal dominated tehsil name Gaurella out of eight tehsils of old Bilaspur district. Four villages have been surveyed by scheduled method.

V. RESULTS AND DISCUSSION

A. Settlement Pattern

At present, the way of life and livelihood of the tribal is changing a lot. In the past tribal people prefer to live in the forest in their traditional way. However many tribal settlements can be seen by the forest along the roadside. There are a least number of green villages or hamlet or remote village in the interior part of the forest. The scattered settlements have decreased day by day in the central region of India and also in Gasurella tehsil.

B. Nature of Food Habit

In the past they were totally dependent on forests for food. The food habits of the tribals have changed a lot from earlier. As earlier wild fruits, tubers, bamboo shoot were collected and consumed as food, nowadays this catch has changed somewhat. Most people now eat cooked food as the market is developing in the area near their settlement. And they get their necessary food items vegetables and other accessories from there. Even with non-tribal neighbours, many dietary habits of tribals are changing. They are no longer dependent on the forest for food as much as before. [1] They used to go out in groups into the dense forest for hunting for their primary needs. Though there are many changes in the tribal community at Gaurella, the inhabitants of the hilly areas have not changed much from their earlier food habits.

C. Group Living in a Particular Area

Tribal people generally marry within their community. But now it is seen that they are getting married outside their own group. The expansion of education is one of the main reasons for the change in marriage practice among the tribal's.

D. The Predominance of Group Labourers

Blood-relation is the greatest bond and source of power. However, at present, despite living in a group, various disputes related to land are being noticed within the group. There is lack of group labour system in cultivation of land. The practice of herding ships, cows, and goats in a group has come down a lot.

E. Political Perspective

A single political party prevails over the entire local tribal group. As the leader of the local party, they prefer the local people. Form being associated with a single political party they demonstrate their power and ensure their security. Though in present they are divided into different small groups and each group chooses its own leader.

Currently there are some exceptions to this system. At present, different political parties are encouraging them in different ways, taking advantages of their simplicity. They forget that the unity is essential to retain their identity.

F. Common Economic Practices

Above 90% of the tribal workers are directly or indirectly connected with agriculture. Some of them are engaged with forestry and food gathering. At present, a least number of tribal people are participating in activities other than agriculture. The children of the new generation are trying to move to the nearest town to take computer training and getting work in any on-line center or in a store. A very little number of male children are trying hard enough to get a job in the defence line. In each village one 'Mitadin' is appointed among women for primary health care. More than one 'Mitadin' is appointed in case of large village. They get salary from the government but the amount is very low.

G. Agricultural Activities

The tribal women of this region are directly and indirectly involved mostly in the agricultural activities. Their close relationship may be seen in every activity from tilling to harvesting. They have been doing this for a long time. The number of landless women is more noticeable in this regard. They also work as daily land labourers. But their wages is very low. Women comprise 33% of the agricultural labourer in our country. According to the NSSO report 18% of agricultural families in the country are headed by women. [2] Previously, men were the head of the family, although both directly and indirectly women have been seen to play a major role in various agricultural activities. But now, this trend has been changing to some extent. Now the number of women headed families is increasing day by day. This region is no exception.

H. Simplicity and Self Sufficiency

Maximum tribal society is simple in living and in character. Normally they practice subsistence economy. They spend a long time of the day for hunting, collection of roots, fruits, barrier, honey and collecting some other forest products. Once they were fully self sufficient. But in present situation, they are becoming more and more dependent on government and on other civilized community. [3] The main reason for the dependence on the government is deforestation and population growth. Once they depended on the forest for their livelihood, now the forest is shrinking due to various government policies and the pressure of civilized population.

I. Living in Forest and Hilly Area

Naturally they live in the forest or in the hilly area. A little part of Maikal mountain range extends over Gaurella tehsil. They have been living together for a long time but now, some of them have left the group or locality on the basis of opportunity. At Gaurella tehsil, a number of new settlements have sprung up beside the road. The reason for the relocation is considered to be livelihood or the facilities of transport and communication.

J. Changing Nature of Literacy

“It can be seen that India has a long history of organized education system for women since the Vedic period. But with the passage of time the condition of women in societies began to change”. [4]

According to different census year it is clear that the female literacy in the region has increased a lot compared to that of the whole country.

TABLE I. LITERACY RATE INDIA AND GAURELLA

Census Year	Literacy Rate		
	1991	2001	2011
India	52.21	64.32	74.04
Gaurella Tehsil	28.23	41.43	53.94

Source: Census of India 1991-2011

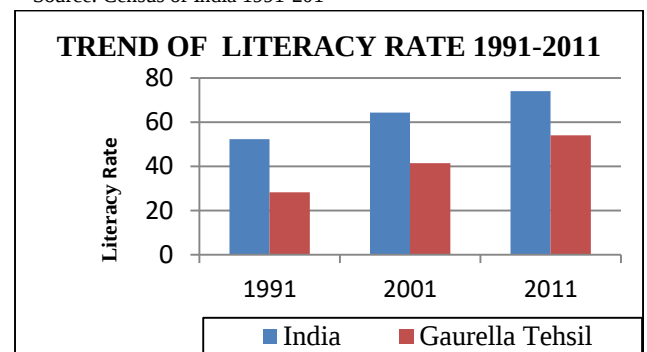


Fig. I Literacy rate of Gaurella and India, 1991-2011

TABLE II. LITERACY RATE TREND INDIA AND GAURELLA TEHSIL

Census year	2001			2011		
	Total	Male	Female	Total	Male	Female
India	65.38	75.85	54.16	74.04	82.14	65.46
Chhattisgarh	64.66	75.70	55.73	70.28	80.27	60.24
Bilaspur District	63.5	78.4	48.2	72.87	83.04	58.35
Gaurella Tehsil	58.00	72.30	43.70	64.01	73.9	53.9

Source: District census Handbook, Bilaspur, 2001& 2011

Women are far lag behind about literacy in this region. They have no more interest in education. Where in our country the difference in literacy rate between men and women is 16.68 percent, it is 24.60 percent much higher in Bilaspur and the difference is the percentage of Gaurella tehsil is 20 percent present in India and 28.60 percent in Gaurella region. In the decade 2001 to 2011, India has able to manage to reduce this gap 5.01 percent, on the other hand it was 8.60 percent. In other words, it can be said that the progress of women's education has been slightly higher than that of India in the last decade, which is a positive sign. But in addition to house work girls spend a lot of time in field for agricultural work and supply labour in brickfield, so

there they get less time for their education. However, the current increase in the number of school-going girl children can be expected to advance the improvement of women education in the near future. Along with this, socio-economic development of this region will happen through women education.

TABLE III. FEMALE LITERACY RATE TRIBAL AREAS (RURAL) OF BILASPUR

Sl.No	Tehsil	Percentage of ST population (rural), 2011	Female literacy rate(rural)		
			1991	2001	2011
1	Marwahi	59.45	17.56	41.6	53.94
2	Pendra	61.00	15.70	42.5	53.68
3	Gaurella	62.85	14.67	37.5	49.85

Source: District Census Handbook , Bilaspur 1991-2011

The speed of the female literacy rate is very slow in the three tribal dominated tehsil of Bilaspur and poor in Gaurella tehsil (49.85%). In these three tehsil female literacy is much lower than male.

Various census years showed that male-female literacy gap was once (1991 & 2001) very high (about 30%) but now (2011) it has shrunk a bit (20%).

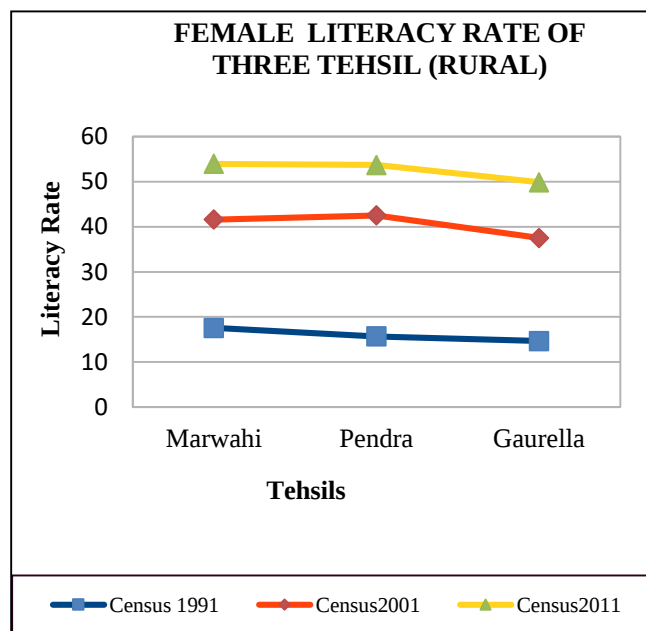


Fig.II Female literacy rate of three selected tehsils

K. Decreases the Gap in Male-Female Literacy

There is an inverse relationship between women education and gap of literacy. If women education will improve, then the gap between male-female literacy will decrease automatically. About three decades ago,

male literacy rate at Gaurella tehsil was almost three times lower than the male literacy rate, while this gap has narrowed over time.

L. Change in Marriage Age

Women who are 35 years old have children between 5 and 20 years old. It is generally said that if girls get married at an older age, the number of children will decrease a lot. [5] There is a positive relationship between female education and marriage age. Earlier most of the girls in this region were got married between the ages of 14-16, but now this age group has gone between 17-19 years.

M. Fertility Rate

An increase in female education has a negative effect on fertility. Educated women marry at a slightly older age from early, results in sorting of their reproductive age. This leads to low number of children. Moreover, the opinion of educated women is considered acceptable by the husbands, so they refrain from giving birth to more children. They single out the economic problems and educational problems that children are likely to experience as a result of having more children. [6] During the survey, it has been found that mothers aged 30 to 35 years have two to three children in their households in this region as well. That is, with the increase in literacy, the birth rate has been controlled quite a bit.

N. Gap in Male-Female Literacy

Now educational progress is being noticed in both men and women. Adult male literacy rate is much higher than that of the female. Female education is one of the tools to eliminate the gender gap. Female education is particularly helpful in increasing productivity in the labour market. The resource productivity of an educated woman is much higher. Family health of educated women improves child survival and human capital investment in children. [7] Male-female literacy gap is very wide in this region. In Marwahi, Pendra and Gaurella this gap was 29.4, 29.6 and 30.4 respectively as per census 2001, which got reduced to 21.78, 21.42 and 20.86 percentage respectively in 2011 census. This gap has been reduced a lot compared to before.

TABLE IV. GAP IN MALE-FEMALE LITERACY RATE 1991-2011

SL. NO.	Tehsil	1991		2001		2011		Gap in male-female literacy rate		
		Male	Female	Male	Female	Male	Female	1991	2001	2011
1	Marwahi	45.63	17.65	70.9	41.6	75.72	53.94	28.07	29.4	21.78
2	Pendra	44.61	15.70	72.1	42.5	75.10	53.68	28.91	29.6	21.42
3	Gaurella	41.43	14.67	68.0	37.5	70.71	49.85	26.76	30.4	20.86

Source: District Census Handbook , Bilaspur 1991-2011,

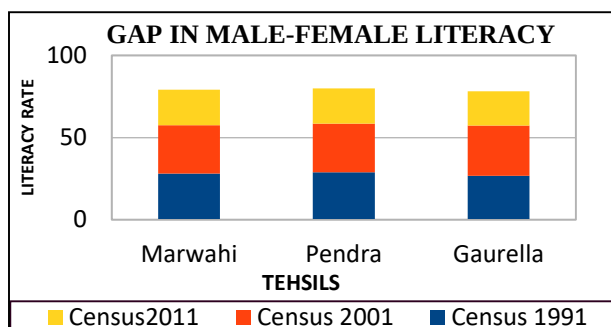


Fig. III Gap in male-female literacy

Fig. IV Trends of male-female literacy rate

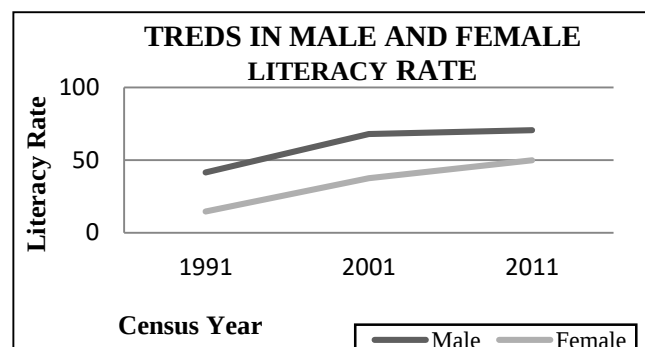
The study found that early marriage in the region is much less than before, so it is expected that the gap in male-female literacy rate will be narrow in near future. It has been observed that the children are more interested to get education of those families where women have got at least a little education. The collapse of male-female gap in literacy highlights the potential for improvement of socio-economic condition not only the specific tribal families but also it spread out in the entire society and the region.

VI. CONCLUSION

Gaurella is one of the backward tehsil of old Bilaspur district in term of socio-economic development. From the above discussion we can conclude that the tribal women do not have an access to education, they want to fulfill their dream of education through their children. It can be said that the standard of tribal women in the tribal areas of Bilaspur has improved somewhat compared to the past, but literacy rate has not yet increased at that rate. Therefore, it can be said that in future, the improvement of women's education in the region will be possible with the quality of life which will help to change their socio-economic status.

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REVIEW OF THE MITTAG-LEFFLER FUNCTION AND ITS GENERALIZATION RESULTS

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Abstract-The object of this paper is to review the Mittag-Leffler function and its generalization.

IndexTerms-Conjugate series, Fourier series, Matrix sum ability. **MSC:** 40C05, 42A16, 42A50.

I. INTRODUCTION

In 1903 the swedish Mathematician. Mittag-Leffler G.M. initiated the analytic function which is known as Mittag-Leffler (M-L) function is given below

$$E_{\theta}(z) = \sum_{n=0}^{\infty} \frac{z^n}{\Gamma(n\theta+1)} \quad (1.1)$$

Where $z, \theta \in \mathbb{C}, \Re(\theta) > 0$.

[9] Generalized the above equation (1.1) and was introduced as

$$E_{\theta, \vartheta}(z) = \sum_{n=0}^{\infty} \frac{z^n}{\Gamma(n\theta+\vartheta)} \quad (1.2)$$

Where $z, \theta, \vartheta \in \mathbb{C}, \Re(\theta) > 0, \Re(\vartheta) > 0$.

The generalization of $E_{\theta, \vartheta}(z)$ was studied [8] and known as generalized M-L function in the following form

$$E_{\theta, \vartheta}^{\gamma}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_n}{\Gamma(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.3) \quad \text{where } z, \theta, \vartheta \text{ and } \gamma \in \mathbb{C}, \Re(\theta) > 0, \Re(\vartheta) > 0 \text{ and } \Re(\gamma) > 0.$$

The function $(\gamma)_n$ is Pochhammer symbol

$$\text{defined by } (\gamma)_n = \frac{\Gamma(\gamma+n)}{\Gamma(\gamma)} = \begin{cases} 1 & \text{if } n = 0, \gamma \in \mathbb{C} \setminus \{0\} \\ \gamma(\gamma+1) \dots (\gamma+n-1) & \text{if } n = 1, 2, \dots, \gamma \in \mathbb{C} \end{cases}$$

(1.4)

[15] studied the M-L function

$$E_{\alpha, m, l}(z) = \sum_{n=0}^{\infty} a_n z^n \quad (1.5)$$

where $a_n = \prod_{j=0}^{n-1} \frac{\sqrt{[\alpha(jm+l)+1]}}{\sqrt{[\alpha(jm+l+1)+1]}}$, $n \in \mathbb{N}_0$ and $\alpha, l, z \in \mathbb{C}, \Re(\alpha) > 0, m > 0, l \in \mathbb{R}, \alpha(jm+1) \notin \mathbb{Z}$.

[9] Introduced generalized M-L function in following form

$$E_{\theta, \vartheta}^{\gamma, s}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{ns}}{\Gamma(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.6)$$

Where $z, \theta, \vartheta, \gamma \in \mathbb{C}, \Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0, s \in (0, 1) \cup \mathbb{N}$.

A further generalization of the equation (1.6) was derived [6] as

$$E_{\theta, \vartheta}^{\gamma, s}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{sn}}{\Gamma(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.7)$$

where $z, \theta, \vartheta, \gamma, s \in \mathbb{C}, \Re(\theta) > \max\{0, \Re(s) - 1\}, \Re(\vartheta) > 0, \Re(\gamma) > 0, \Re(s) > 0$.

The aim of the present paper is to develop a new generalized form of the fractional kinetic equation involving a generalized K – Mittag – Leffler function[1]

We present in this paper a generalization of the fractional kinetic equation using the generalized incomplete wright hypergeometric function[2].

The aim of this paper is to obtain certain properties of j-generalized p-k Mittag-Leffler function via Riemann-Liouville fractional integrals and derivative. Some remarkable particular/special cases also been discussed in detailed by taking suitable values of parameters[3].

In this paper, we evaluate Mellin-Barnes integral representation of p-k Mittag-Leffler Function with their several special cases. The relationship of p-k Mittag-Leffler Function with Fox H-Function and Wright hypergeometric function is also establish. In last we obtained its Euler transform, Laplace Transform, Mellin transform and several special cases[4].

In this paper we introduce the p-q-k Pochhammer Symbol (q-analogue of p-k Pochhammer Symbol). We construct p-q-k Gamma and Beta functions (q-analogue of p-k Gamma and Beta functions respectively). Also, we prove some properties similar to those satisfied by the classical Gamma and Beta functions[5].

In this paper, we further study the generalized fractional integral and differential operators involving Appell's functions $F_3(\cdot)$ [6].

In present paper we find some important compositions of p-k extended Mittag-Leffler function with their special cases by using Marichev-Saigo-Maeda differential and integral operators. These results are further expressed with relation of p-k extended Mittag-Leffler

function with Fox-H function and Wright hypergeometric function. In last we obtained some special cases of these functions[7].

Another generalization of M-L function called M-series has been studied [7] and introduced as

$${}_p M_q^\theta(a_1, \dots, a_p; c_1, \dots, c_q; z) = \sum_{n=0}^{\infty} \frac{(a_1)_n \dots (a_p)_n}{(c_1)_n \dots (c_q)_n} \frac{z^n}{\Gamma(n\theta + \vartheta)} \quad (1.8)$$

$$= {}_p M_q^\theta(z)$$

where $z, \theta, \vartheta \in \mathbb{C}$, $\Re(\theta) > 0$, $a_i, c_j \neq 0, -1, -2, \dots$ ($i = 1, \dots, p; j = 1, \dots, q$).

$(\cdot)_k$ denotes the Pochhammer symbol defined as

$$(\lambda)_\nu = \frac{\Gamma(\lambda + \nu)}{\Gamma(\lambda)} \lambda \neq 0, -1, -2, \dots \quad (1.9)$$

when we put $p \leq q$ then series convergent for all z .

- I. When we take $p = q+1$ and the series is convergent and $p > q+1$ divergent for $|z| = \delta = \lambda^\lambda$ is applicable for both.
- II. when we take $p = q+1$ and $|z| = \delta$ then series convergent depending on the parameter.

A further generalization of the equation (1.9) was defined [8] in this form

$$E_{\theta, \vartheta}^{\gamma, \delta}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_n}{\Gamma(n\theta + \vartheta)} \frac{z^n}{(\delta)_n} \quad (1.10)$$

Where $z, \vartheta, \gamma, \delta \in \mathbb{C}$, $\Re(\theta) > 0$, $\Re(\vartheta) > 0$, $\Re(\gamma) > 0$, $\Re(\delta) > 0$.

[16] Derived 3-M parameter Multi-index M-L function as.

$$E_{(\theta_i), (\vartheta_i)}^{(\gamma_i), m}(z) = \sum_{n=0}^{\infty} \frac{(\gamma_i)_n}{\Gamma(n\theta_i + \vartheta_i)} \frac{z^n}{(n!)^m} \quad (1.11)$$

$$= \sum_{n=0}^{\infty} \frac{(\gamma_1)_n \dots (\gamma_m)_n}{\Gamma(n\theta_1 + \vartheta_1) \dots \Gamma(n\theta_m + \vartheta_m)} \frac{z^n}{(n!)^m}$$

Where $n \in \mathbb{N}$, $\theta_i, \vartheta_i, \gamma_i \in \mathbb{C}$, $\Re(\theta_i) > 0$ and $m > 1$ $i = 1 \dots m$

$(\gamma)_n$ denotes the Pochhammer symbol defined the equation (1.11).

A further generalization of the equation (1.11) studied by [12] in this form

$$E_{\theta,\vartheta,p}^{\gamma,\delta,s}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{sn}}{\Gamma(n\theta+\vartheta)} \frac{z^n}{(\delta)_{pn}} \quad (1.12)$$

where $z, \theta, \vartheta, \gamma, \delta \in \mathbb{C}$, $\min\{\Re(\theta), \Re(\vartheta), \Re(\gamma), \Re(\delta)\} > 0$ and $p, s > 0, s \leq \Re(\theta) + p$.

Another generalization of M-L function was studied [5] and known as k M-L function in the following form

$$E_{k,\theta,\vartheta}^{\gamma}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{n,k}}{\Gamma_k(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.13) \quad \text{where } k > 0, \\ z, \theta, \vartheta, \gamma \in \mathbb{C}, \Re(\theta) > 0, \Re(\vartheta) > 0.$$

[7] Defined k-Pochhammer symbol as

$$(\gamma)_{n,k} = \frac{\Gamma_k(\gamma+nk)}{\Gamma_k(\gamma)} = \begin{cases} 1 & \text{if } n = 0 \\ \gamma(\gamma+k) \dots (\gamma+(n-1)k) & \text{if } n \in N \end{cases} \quad (1.14)$$

$\Gamma_k(z)$ is k-Gamma function defined as

$$\Gamma_k(z) = \int_0^{\infty} e^{-\frac{t}{k}} t^{z-1} dt \quad (\Re(z) > 0) \quad (1.15)$$

Further generalization of M-L function called generalized k-M-L function has been initiated by [8] as

$$GE_{k,\theta,\vartheta}^{\gamma,s}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{ns,k}}{\Gamma_k(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.16)$$

Where $k \in \mathbb{R}$, $z, \theta, \vartheta, \gamma \in \mathbb{C}$, $\Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0, s \in (0,1) \cup N$.

$\Gamma_k(z)$ is k-Gamma function mentioned the equation (1.15).

Where $(\gamma)_{sn}$ denoted the generalized Pochhammer symbol.

$$(\gamma)_{sn} = \frac{\Gamma(\gamma+sn)}{\Gamma(\gamma)} \\ (\gamma)_{sn} = s^{sn} \prod_{r=1}^s \binom{\gamma+r-1}{s} \quad \text{if } s \in N$$

[9] Initiated the generalized Mittag-Leffler function as follow

$$E_{\theta,\vartheta,\sigma,\omega,\delta,p}^{\mu,\rho,\gamma,s} = \sum_{n=0}^{\infty} \frac{(\mu)_{pn}(\gamma)_{sn}z^n}{\Gamma(n\theta+\vartheta)(\sigma)_{\omega n}(\delta)_{pn}} \quad (1.17)$$

where $\theta, \vartheta, \gamma, \delta, \mu, \omega, \rho, \sigma \in \mathbb{C}$; $p, s > 0, s \leq \Re(\theta) + p$.

$$\min \left\{ \Re(\theta), \Re(\vartheta), \Re(\gamma), \Re(\delta), \Re(\mu), \Re(\omega), \Re(\rho), \Re(\sigma) \right\} > 0.$$

The multivariable generalization of the function given by equation (1.12) was introduced [12], Another generalization above defined function was studied by Gurjar M. K. in the year 2014.

[13] introduced the R-function in the form

$${}_pR_q^{\theta,\vartheta,\gamma}(z) = {}_pR_q^{\theta,\vartheta,\gamma}(a_1 \dots a_p; b_1 \dots b_q; z) \\ = \sum_{n=0}^{\infty} \frac{\prod_{i=1}^p (a_i)_n}{\prod_{j=1}^q (b_j)_n} \frac{(\gamma)_{sn}}{\Gamma(n\theta+\vartheta)} \frac{z^n}{n!} \quad (1.18)$$

Where $\theta, \vartheta, \gamma \in \mathbb{C}$, $\Re(\theta) > \max\{0, \Re(s) - 1\}$ and $\Re(s) > 0$.

$(a_j)_n$ and $(b_j)_n$ are the Pochhammer symbol mentioned the equation (1.15).

If b_j is not negative or zero then series (1.18) is valid defined. If a_j is negative or zero then equation (1.18) reduced to polynomial in z .

Case 1: When we put $p < q+1$ then series is convergent for all z .

Case 2: When we take $p = q+1$ then series is convergent in some case

$$\text{Let } \gamma = \sum_{j=1}^p a_j - \sum_{j=1}^q b_j.$$

- I. Then series is absolutely convergent for $|z| = 1$ when we take $\Re(\gamma) > 0$ and $p = q+1$.
- II. The series is convergent for $z = -1$ if we take $0 \leq \Re(\gamma) < 1$.
- III. The series is divergent for $|z| = 1$ if we take $1 \leq \Re(\gamma)$.

[5] initiated p-k M-L function as

$${}_pE_{k,\theta,\vartheta}^{\gamma}(z) = \sum_{n=0}^{\infty} \frac{p^{(\gamma)_{n,k}}}{p^{\Gamma_k(n\theta+\vartheta)}} \frac{z^n}{n!} \quad (1.19)$$

Where $z, \theta, \vartheta, \gamma \in \mathbb{C}$, $\Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0$ and $p, k \in \mathbb{R}^+ \setminus \{0\}$.

Also, p^{Γ_k} the p-k Gamma function by Gehlot K. S. (2017) defined as

$$p^{\Gamma_k}(z) = \frac{1}{k} \lim_{n \rightarrow \infty} \frac{n! p^{n+1} (np)^{\frac{z}{k}}}{p^{(z)_{n+1,k}}} (z \in \mathbb{C} \setminus k\mathbb{Z}^-, \Re(z) > 0, n \in \mathbb{N}) \quad (1.20)$$

or

$$p^{\Gamma_k}(z) = \frac{1}{k} \lim_{n \rightarrow \infty} \frac{n! p^{n+1} (np)^{\frac{z}{k}-1}}{p^{(z)_{n,k}}}$$

$$p^{\Gamma_k}(z) = \int_0^{\infty} e^{-\frac{t}{p}} t^{z-1} dt \quad (p, k \in \mathbb{R}^+ - \{0\}, z \in \mathbb{C} \setminus k\mathbb{Z}^-) \quad (1.21)$$

p-k Pochhammersymbol has been studied [8] defined as following

$$p^{(\gamma)_{n,k}} = \left(\frac{\gamma p}{k}\right) \left(\frac{\gamma p}{k} + p\right) \left(\frac{\gamma p}{k} + 2p\right) \dots \dots \dots \left(\frac{\gamma p}{k} + (n-1)p\right) = \frac{p^{\Gamma_k(\gamma+nk)}}{p^{\Gamma_k(\gamma)}} \quad (1.22)$$

[8] investigated p-k M-L function as

$${}_pE_{k,\theta,\vartheta}^{\gamma,s}(z) = \sum_{n=0}^{\infty} \frac{p^{(\gamma)_{ns,k}}}{p^{\Gamma_k(n\theta+\vartheta)}} \frac{z^n}{n!} \quad (1.23)$$

Where $z \in \mathbb{C}, \theta, \vartheta, \gamma \in \mathbb{C}/k\mathbb{Z}^-, \Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0, s \in (0,1) \cup \mathbb{N}$ and $p, k \in \mathbb{R}^+ \setminus \{0\}$.

Where p^{Γ_k} and $p^{(\gamma)_{ns,k}}$ is p-k Gamma function and Pochhamer (p-k) symbol.

and p-k Pochhammer symbol has been studied [9] defined as following

$$p^{(\gamma)_{n,k}} = \left(\frac{\gamma p}{k}\right) \left(\frac{\gamma p}{k} + p\right) \left(\frac{\gamma p}{k} + 2p\right) \dots \left(\frac{\gamma p}{k} + (n-1)p\right) = \prod_{i=0}^{n-1} \left(\frac{\gamma p}{k} + ip\right) \quad (1.24)$$

Where p-k Gamma function mentioned in equation (1.18) and (1.19).

Luque L. L. (2019) derive the L M-L in the form of

$$L_{\theta,\vartheta}^{\gamma,j}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{n+j}}{\Gamma(n\theta+\vartheta)} \frac{z^n}{(n+j)!} \quad (1.25)$$

Where $z \in \mathbb{C}, \theta, \vartheta, \gamma \in \mathbb{C}/k\mathbb{Z}^-, \Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0$ and $j \in \mathbb{N}_0$

The new generalization of M series with the help of extended Beta function has been introduced [16] is given as following

$${}_pM_q^{\theta}(a_1, \dots, a_p; c_1, \dots, c_q; b; z) = \sum_{n=0}^{\infty} \frac{(a_2)_n \dots (a_p)_n B_b(a_1+n, a_1-c_1)}{(c_2)_n \dots (c_q)_n B(a_1, a_1-c_1)} \frac{z^n}{\Gamma(n\theta+\vartheta)} = {}_pM_q^{\theta}(z; b)$$

Where $z, \theta, \vartheta \in \mathbb{C}, a_i, c_j \neq 0, -1, -2, \dots (i = 1, \dots, p; j = 1, \dots, q), \Re(b) > 0, \Re(\theta) > 0, \Re(c_1) > \Re(a_1) > 0$.

Here $(.)_n$ denotes the Pochhamer symbol defined the as

$$(\lambda)_v = \frac{\Gamma(\lambda+v)}{\Gamma(\lambda)} \lambda \neq 0, -1, -2, \dots$$

When we put $p \leq q$ then series convergent for all z we ge

1. When we take $p = q+1$ and $p > q+1$ then series convergent and divergent for $|z| = \delta = \lambda^{\lambda}$.
2. When we take $p = q+1$ and $|z| = \delta$ then series convergent depending on the parameter.

Another generalization of equation (1.22) was introduced [8]. and known as j- generalized p-k M-L function in the following form

$${}_pE_{k,\theta,\vartheta}^{\gamma,s,j}A(z) = \sum_{n=0}^{\infty} \frac{p^{(\gamma)_{(n+j)s,k}}}{p^{\Gamma_k(n\theta+\vartheta)}} \frac{z^n}{(n+j)!} \quad (1.27)$$

Where $z \in \mathbb{C}, \theta, \vartheta, \gamma \in \mathbb{C}/k\mathbb{Z}^-$ with $\Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0, s \in (0,1) \cup \mathbb{N}$ and $p, k \in \mathbb{R}^+ \setminus \{0\}$ and $j \in \mathbb{N}_0$ and

Where p-k Gamma function defined in equation (1.26) and (1.27) and $p^{(\gamma)_{ns,k}}$ is Pochhamer p- k symbol defined in equation (1.27).

Another further generalization of the equation (1.18) was studied [1],[2] and known as M-L (p,s,k) function is given by

$${}_pE_{k,\theta,\vartheta}^{\gamma,s}(z) = \sum_{n=0}^{\infty} \frac{p^{(\gamma)_{n,k,s}}}{p^{\Gamma_{s,k}(n\theta+\vartheta)}} \frac{z^n}{n!} \quad (1.28)$$

Where, $k, p \in \mathbb{R}, z, \theta, \vartheta, \gamma \in \mathbb{C}, \Re(\theta) > 0, \Re(\vartheta) > 0, \Re(\gamma) > 0$.

Where, $p^{(\gamma)_{n,k,s}}$ is Pochhamer (p,s,k) symbol and $p^{\Gamma_{s,k}}$ is (p,s,k) Gamma function. $(p-s-k)$ Pochhammer symbol is given following

$$p^{(\gamma)_{n,k,s}} = \left[\frac{\gamma p}{k}\right]_s \left[\frac{\gamma p}{k} + p\right]_s \dots \dots \left[\frac{\gamma p}{k} + (n-1)p\right]_s$$

$$(1.29)$$

$$= \prod_{i=0}^{n-1} \left[\frac{\gamma p}{k} + ip\right]_s$$

Where $[\gamma]_s = \frac{1-s^\gamma}{1-s} \forall \gamma \in \mathbb{R}, < s < 1$ and $(p-s-k)$ gamma function is given following

$$p^{\Gamma_{s,k}}(z) = \frac{s}{k} \lim_{n \rightarrow \infty} \frac{n! p^{n+1} (snp)^{\frac{z}{k}-1}}{p^{(z)_{n,k}}}$$

$$(1.30)$$

$$p^{\Gamma_{s,k}}(z) = \int_0^\infty e^{\frac{-t^k}{sp}} t^{z-1} dt$$

Thus many scientists, different type of generalized Mittag-Leffler function defined in their own way.

II CONCLUSION

In this paper, we have review many new type and mixed type polynomials associated with sequences of polynomials of generalized Mittag-Leffler function.

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Impact of Advertisement on Consumer Behaviour

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Abstract—Marketers employ many media channels to sway consumer actions and preserve client allegiance inside the industry. In this regard, it is crucial to remember that different media platform advertising convey varying amounts of information about the items. This encourages the customer to become interested in the goods that businesses sell. In today's economy, changes in consumer behaviour are closely linked to digitization. Therefore, in order to establish a good rapport with the customers in the market, it is necessary to investigate how ads influence consumer behaviour. This paper's primary focus is on how advertisements affect customer behaviour. An online survey served as the main means of gathering data for this investigation. The information utilised in this study came from 500 internet users. diverse ages and educational backgrounds; gender equality was also taken into account. In addition, the study used statistical methods such as Cronbach Alpha, EFA, and Kruskal-Wallis (K-W) to examine the information gathered. The study's findings indicate that changes in consumer behaviour are linked to ads, including those seen in newspapers. Furthermore, it has been shown that television and internet commercials also have an impact on consumer behaviour as they provide a means for customers to fully comprehend the types of items that are offered in the market. Based on the gathered data, marketers have made investments in newspaper and magazine adverts in an attempt to influence customer behaviour and win them over to the items that are on the market. Marketing managers would benefit greatly from this research as it will help them determine which media to use for their ads and how to make their commercials more objective.

Index Terms—Media Channels, Consumer, Behavior, Advertisement, Objectivity, Media advertisement, Digitalization

INTRODUCTION(HEADING1)

The study of how advertisements affect customer behaviour has been crucial in helping businesses connect with a wide range of consumer types and win their loyalty by providing high-quality goods and services than rivals in the market. The venues for advertisements that are now in use in today's commercial world accept the reality of digital technology. Thus, the emphasis on social media as well as the internet marketplace has been quite helpful in assisting a business in comprehending the needs and wants of its intended clientele. Since a substantial portion of the target market views online marketplaces as the most convenient places to make product orders, starting a business in a free-market economy requires taking the effort to engage in digital marketing. Throughout sales promotions and commercials, the business's advertising and marketing executives must capture the interest of customers. Reaching consumers and influencing their opinions, purchasing patterns, and knowledge of certain products or services is the primary goal of advertisements. Marketers' main objective is to sway consumers' choices and decision-making processes in accordance with their advertisements and marketing objectives [2]. Advertising uses a variety of mediums to reach people. The influence that each channel has on customer behaviour varies. The purpose of ads is to contact people and get their opinions

about various goods and services. Marketers and marketing directors utilise these comments to enhance the calibre of their goods and services as well as the creative elements of their advertisements.

The most useful strategies for attracting the intended audience to the internet site via advertising have not been thoroughly investigated in the preceding studies. Therefore, by addressing crucial digital marketing ideas to uphold customer loyalty and connect with a wide range of market consumers, this specific study aims to close such research gaps [7]. For example, the study recognises the use of social media agents to actively interact with consumers and address their questions about the kind of goods that businesses in the market are selling.

Considering the investigation's perceived importance, it is crucial to highlight that different advertising strategies are employed by marketers based on their desire to sway prospective clients, which supports the study's main focus. It is important to remember that all of the strategies seek to encourage customers to purchase their goods and persuading them to believe a certain product offers greater value than comparable ones in the identical market. By examining the many types of advertising that marketers use to keep customers loyal and connect with them, this study demonstrates its importance. For example, the two most well-known categories of commercials are reasonable and illogical ones. Informative ads, in which the advertisers emphasise the product's characteristics more, are examples of rational commercials. However, Ashraf and Asif's research from 2019 indicates that illogical advertising emphasise the social consequences and emotions of their target audience [2]. Therefore, it is rather obvious to accept the logic that knowing how advertisements affect consumer behaviour is important for enhancing society's standard of living and for outlining customers' roles in the marketplace.

STRATEGY FOR PRESENTING ADS

Advertisers deliver their ads using two distinct approaches: the emotive approach and the environmental method. The main idea behind the ecological strategy is to offer specific experiences that marketers may utilise to market and advertise a range of goods and services. For example, businesses provide customers with a variety of media experiences in order to prepare them for marketing

and promotion of their goods and services. The assessment of customers' purchasing decisions is heavily influenced by a variety of broad groups of surrounding variables, including ambient sound and retail store environments. This is a fundamental aspect of the endeavour to comprehend corporate organisations' cultures. Considering the idea of emotional reaction, it is crucial to highlight that a sizable portion of customers utilise commercials that psychologically inspire them [5]. For example, emotionally charged advertising aims to increase consumer choice and preference for the product as well as brand recognition. In advertisement and marketing research, the consumer's perception of the advertisement is critical to eliciting an emotional reaction. Therefore, businesses may leverage the perception that consumers have of a certain advertisement to shape consumer behaviour and win their allegiance. A good reaction to the advertising is the ultimate objective of all marketing strategies, as it indicates the most successful kind and distribution method. Following are three typical approaches that advertisers use to show advertisements, based on the surroundings and psychological approaches.

Utilization of Media Platforms

Advertisers and marketers reach out to specific customers with their content via a variety of channels. As per Ayanwale et al., the most widely used platforms for advertising and consumer engagement at the moment are magazines, television, newspapers, and the internet. Email correspondence, billboards, interactive games, banner ads, and other media are examples of advertisement. Investigations conducted in 2004 found that digital ad platforms accounted for 44% of all advertising spending [9]. On the other hand, newspaper advertisements have been linked to brand development and changing customer behaviour.

The way that adverts work affects how customers behave and make decisions. The consumer's preference, which results in the purchase of the promoted goods, is referred to as advertisement effectiveness. A number of variables affect the efficiency of advertisements, such as the calibre of the media, the media channel selected, and the calibre of the content. Television and the internet continue to be the biggest media channels for advertising [9]. These kinds of platforms employ a visual introduction

strategy to trick customers into buying the items. Advertisements influence customer decision-making in a number of ways. Models and celebrities are among them in an effort to draw in customers and persuade them to purchase their goods. Repetitive messaging informing customers of their items is one tactic used by certain businesses to sway their decisions. It is assumed that informing customers about a product on a regular basis might lead to a final purchase.

Intervention on Consumer Awareness

Research show that when people are continuously reminded of a product, they get interested in it and choose to consider its advantages [10]. With regard to the benefits these items provide, customers are more likely to trust the firm and choose to purchase its goods. The awareness that commercials raise in customers is one way that they affect their behaviour. Marketing efforts and promotions, in Morello's opinion, give customers news and details about the product without expressing acceptance or condemnation [10]. Customers are often curious in products at this time, particularly if they are new to the market. According to Grayson, an advertising heightens the customer's materialistic character and is related to an individual's materialistic tendency [10]. Some individuals have come to believe that ads pressure us to acquire nice goods rather than lead happy lives.

Promotion and Promotional Activities

The sole goal of the advertising business is to influence customer behaviour. Whether or not customers need the products, they attempt to make them desire them. Without making appropriate advertising investments, no business can develop its brand. Textual and promotional materials are included in advertisements. One of the most common tactics in the consumer sector is still advertising, which always aims to change the choices and behaviours of the target audience [6]. To trick consumers into buying their items, most advertisers even go so far as to fabricate visuals. Shaping customer behaviour is the main goal of promotions and ads, and developing a strong brand has long been thought to be the most effective strategy for doing so. This indicates that the main goal of marketing is to convince people that a certain brand is superior to others and offers greater advantages and satisfaction, thereby making their lives better. The persuasive power of the

commercial encourages prospective buyers to research the brand and give it a try. When customers focus on a specific brand, they will buy the merchandise.

EFFECT OF ADS ON CONSUMER BEHAVIOUR

When customers take the initiative to purchase or use things in accordance with their desires and choices, as well as when they make proactive decisions depending upon the characteristics of the products, this is referred to as consumer behaviour. When making a purchase, a customer goes through a number of stages, which are all part of their behaviour. These consist of determining the need, looking for the product, purchasing it, and assessing it. Marketers and advertising executives monitor customer behaviour in order to exert control over the purchasing habits of customers. All five stages of the decision-making process—problem identification, information search, alternative assessment, purchase, and post-purchase—are impacted by advertisements.

Advertisement and Problem Recognition

The initial stage of a customer's decision-making procedure is identifying a problem. The customer sees something amiss when they become aware of their requirements and seek to fulfil them. Customers' fundamental requirements for things like food, housing, sanitization, medical care, water, and education may be the root cause of the issue that leads to desires and needs [5]. When customers want changes because they are unhappy with their existing circumstances, they frequently identify the issue. Furthermore, the consumer's desire for a more opulent lifestyle might also be the cause of the issue. Marketers have come to understand that as long as there are new items and technologies available in the marketplace today, developing needs and desires is still crucial.

Advertisement and Information Search

Once customers recognise an issue, they begin to seek out solutions. In this phase, customers attempt to investigate the knowledge required to assist in resolving the issue. The majority of marketers use a logical style of advertising, making sure that the goods they promote persuade viewers that their issues can be resolved [4]. But because there are so many options available in the market, buyers are still perplexed at this stage. To assist them make

the best decision, they begin evaluating the various possibilities. Advertisements give customers the information they need to make an informed decision about the product that best suits their needs; they are frequently seen in newspapers, media outlets, radios, televisions, and printed sources.

Advertisement and Evaluating Alternatives

Searching for information and weighing your options are two of the most important things a customer does before making a purchase. In this stage, customers evaluate the various possibilities, deciding which one best addresses their needs and taking other aspects into account. When evaluating an item, buyers always take into account additional aspects, such as the brand name or the item's social prominence [3]. This is a behavioural component that illogical advertising promote. Here, the marketers use illogical promotion to give the product values that are different from its true worth. For instance, a shoe from the Nike brand may shield your feet while also enhancing your appearance and enhancing your social status. This demonstrates very well the main purpose of the product, which is the perceived worth generated by deceptive advertising. As a result, the advertisers who elevate their brand continue to succeed at this stage. Promoters play a part in enhancing the image of their companies and differentiating them from competing goods on the market [4]. The commercial aims to dispel any doubt a customer could have about the company's goods or services. Currently, advertisers employ transformative advertising.

Advertisement and purchase decision

The customer is now well-aware of the brand and item he needs to purchase. This stage of decision-making, nevertheless, may be repeatedly disrupted if the client gets unfavourable comments from colleagues and on social networks. During this stage, marketers concentrate on creating a logical commercial that persuades the viewer and influences their choice to buy by highlighting the essential features of the product. Instead, some marketers use illogical advertising to make the necessity less important than the want [5]. According to the knowledge the marketer wants to convey to customers, they can utilise transformative and informative commercials.

Advertisement and post-purchase

Post-purchase ads are used to foster customer loyalty and an ongoing connection among the business and the customer. During this stage, the marketers want to give the customer product care services, additional details on the product they purchased, or new relevant items. In addition to gathering client input on the items sold, the post-purchase advertisement establishes a strong channel for interaction, enhances the customer experience, and delivers focused messaging [5]. Additionally, marketers may utilise transformative advertising to win back the loyalty of customers and informative advertising to assist sell their new items.

CONCLUSION

According to the research, advertisers' primary purpose is to sway consumers' choices and how they make choices in accordance with their advertisements and marketing objectives. Because of this, marketers must employ a variety of platforms in order to connect with intended audience, taking into account their preferences and behaviour. The careful assessment of online mediums still lags behind since advertisers employ a variety of venues, notably magazines, newspapers, television, and the internet, to reach their target audience. In order to convince people to buy things, thoughtfully delivered messaging must rely on logical reasoning and reasoning [1]. In order to win over customers, businesses must thus demonstrate their competence through the methods they use to convince on advertising platforms. The flaws in this essay stem from its inability to articulate the significance of the beneficial relationship that emerges between businesses and their intended audience as a result of the transition from old methods to digital platforms for advertising. For example, the essay would ultimately have proved more thorough if it had addressed the issue that today's consumers find internet platforms to be the best option for making purchases. Future studies on the effects of ads on consumer behaviour, however, should concentrate on important topics, such as the usefulness of hiring social media workers to answer consumers' questions on the internet [4]. Consumers' purchasing habits would be improved by taking into account the online marketplace, including digital media as well as social media, since they have a simple way to interact with

companies about the content of their goods and services from the convenience of their homes.

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Production, Purification and Characterization of Bacteriocin From *Lactobacillus species* and Study Their Spectrum of Antibacterial Activity Against Some Pathogenic and Food Spoilage Bacteria

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ABSTRACT

Bacteriocin are highly specific antibacterial protein (polypeptides) produced by gram positive bacteria, in particular the lactic acid bacteria display fairly broad inhibitory spectra with food preservative and therapeutic potentials. This work aims at to isolate bacteriocin - producing *Lactobacillus spp.*, and to determine the antibacterial activity against pathogenic bacteria. This work involves methodology, as follows *Lactobacillus sp.*, was isolated from various milk samples by using MRS Agar (Hi-media, India) at 37°C for 48h. The isolates were identified by using conventional biochemical tests. Antibacterial characteristics of bacteriocin were studied by agar well diffusion method and it partially purified by Ammonium sulphate precipitation and dialyzed. The present study revealed that the *Lactobacillus spp.*, strain isolated from various milk samples was capable of producing

bacteriocin and inactivating the widest range of pathogenic bacteria. Totally 48 isolates of *Lactobacillus sp.*, was identified in that only 8 (17%) *Lactobacillus spp.*, have the antibacterial activity against pathogenic bacteria. The study revealed that the antibacterial property of bacteriocin act as a food preservative agent against pathogenic microorganisms.

Index Terms - Antibacterial activity, Bacteriocin, Food preservation, Lactic acid bacteria.

I. INTRODUCTION

Lactic acid bacteria (LAB) are food-grade microorganisms used for the production of numerous fermented food products to improve their flavor, texture and shelf-life. LAB produce antibacterial compounds that include organic acids, diacetyl, hydrogen peroxide and bacteriocins, which are known to reduce food spoilage and growth or proliferation of pathogenic bacteria. Use of these naturally produced compounds as food bio-preservative agents has therefore gained increasing attention in the food industry and now represents a promising way to preserve food without chemical agents, especially in ready-to-use product. Bacteriocins may also find use in the preparation of products that are not submitted to sufficient thermal sterilization during their production, since

they represent a risk of contamination by pathogenic bacteria such as *Listeria monocytogenes*, known in the art to be responsible for numerous worldwide outbreaks.

Lactobacilli are important organisms recognized for their fermentative ability as well as their health and nutritional value. They produce various compounds such as organic acids, diacetyl, hydrogen peroxide, and bacteriocin or bactericidal proteins during lactic fermentations. The antimicrobial properties of *Lactobacilli* are of special interest in developing strongly competitive starter cultures for food fermentation. *Lactobacilli* exert strong antagonistic activity against many microorganisms, including food spoilage organisms and pathogens. Production of the primary metabolite, lactic acid and the resulting pH decrease is the main preserving factor in food fermentation. In

Other chemical -

1M NaOH, HCl, ammonium Sulphate, normal saline (8.9g/l), standard BSA, NaCl, iso-amylalcohol, chloroform,

Isolation of Pure Culture -

- Three sets of *Lactobacillus* selection agar plate of desired medium for each of the samples to be tested were prepared and labeled according to their dilutions (10^{-2} , 10^{-3} , 10^{-4}).
- 100 mg of each sample and 900 μ l of sterile water was added to create the 10^{-1} , 10^{-2} , 10^{-3} , 10^{-4} dilutions at different concentrations.

addition, some strains may contribute to the preservation of fermented foods by producing other inhibitory substances, such as bacteriocins. [1,2]

The aim of this work is isolation of lactic acid bacteria that produce antimicrobial substances belonging to bacteriocin type able to inhibit the bacteria which causes food poisoning.

II. MATERIAL AND METHODS

MATERIALS

Sample - Cheeses, Raw milk, Dosa (Appam) batter, sauce, curd.

Culture media -

For maintenance purposes and bacteriocin sensitivity assays, the strains were grown at 30°C in MRS medium. For the optimization experiments, MRS broth prepared in our laboratory was used.

n-propanol, petroleum ether, hydrogen peroxide, DEAE cellulose column, EDTA, tween 80, tween 20, Deoxycholic Acid, SDS, Acrylamide, Bis Acrylamide, Ammonium per sulphate [3]

- Aseptically 100 μ l of different dilutions were spread in the respective plate.
- All plates were incubated in an inverted position for 24 to 48 hours at 37°C.
- Pure distinct culture colonies were picked and streaked into new agar plate and incubated further in an inverted position for 24 to 48 hours at 37°C [4].

III. DNA Sequencing and Phylogenetic Analysis

DNA Isolation

- Centrifuge 1 ml of the overnight grown culture at 8000 rpm for 5 min, or until a compact pellet forms. Discard the supernatant.
- Re-suspend pellet in 567µl TE buffer by repeated pipetting. Add 10µl Lysozyme (10mg/ml) and incubate for 30 mins at 37°C.
- Add 30µl 10% SDS and 5µl of RNase (10 mg/ml). Mix thoroughly and incubate 1 hr at 37°C.
- Now add µl proteinase K (10mg/ml) and mix thoroughly and incubate 1 hr at 37°C.
- Add an equal volume of phenol/chloroform/isoamyl alcohol, extract thoroughly, and centrifuge at 8000rpm for 5 min.
- Transfer the supernatant to a fresh tube. Repeat the step if necessary.
- Add 70µl of 3M Sodium Acetate and add 1.2 ml of chilled ethanol to precipitate the nucleic acids. Shake the tube back and forth until a stringy white DNA precipitate becomes clearly visible.
- Centrifuge at 8000rpm for 5 min to pellet down the precipitated DNA.
- Wash the DNA with 70% ethanol and centrifuge at 8000rpm for 5 min at room temperature to repellet it. Repeat this step.
- Carefully remove the supernatant and briefly air dry the pellet in laminar flow hood.
- Redissolve the pellet in 50-200µl nuclease free water [5].

IV. RESULTS

26 *Lactobacillus* sp. were isolated from different samples Dosa paste (appam batter), curd, sauce and cheese). After isolation the isolated strains were screened for bacteriocin production potential. Out of 26 only 5 showed good antibacterial activity against indicator bacteria. These *Lactobacillus* sp. were characterized and identified on the basis of their morphological, physiological and biochemical characteristics out of five, two were identified as *L. plantarum* and coded as P1 and P2 due to their different potential in bacteriocin ctivity and other

were identified as *L. casai*, *L. brevis*, *L. fermentum* [6].

For the production of bacteriocin *Lactobacillus* sp. were grown in aerobic and anaerobic conditions. Maximum bacteriocin production was observed in anaerobic where as in aerobic condition very low or no bacteriocin activity was observed.

Optimization of bacteriocin production process was carried out by taking different parameters such as different carbon and nitrogen sources, pH, Temperature, Salt concentration and optimized parameter was determined by Arbitrary unit. Optimized carbon source was 2% glucose. Optimization of nitrogen source was achieved by addition

of different combinations of Tryptone, yeast extract and meat extract and maximum bacteriocin activity for all isolates was observed when all above three nitrogen sources were present in the medium. The optimum pH for the production of bacteriocin were 6-7 for *L. plantarum* P1, P2 and *L. casai* where as optimum pH was achieved at pH 7-8 for *L. fermentum* and *L. brevis*. This showed that extreme alkaline condition did not support bacteriocin production. The optimized temperature for bacteriocin production was achieved at 30°C for all *Lactobacillus* sp. [7].

During the purification procedures, specific activity was increased with each step. All the activity was recovered in the pellet at 80% saturation For *L. brevis* and *L. plantarum* P2. The maximum inhibitory activity was measured at 60% saturation for *L. plantarum* P1, *L. casai*, *L. fermentum*. The above fractions were subjected to ion exchange chromatography. In ion exchange chromatography (DEAE cellulose) the active fraction of bacteriocin produced by *L. plantarum* P1, *L. plantarum* P2, *L. brevis* and *L. casai* were eluted with pH 5.0-citrate phosphate buffer where as in case of *L. fermentum*, it was eluted in pH 4.0- citric phosphate butter.

The purified bacteriocin samples was characterized with respect to thermal and pH stability, stability during storaction with organic solvent, treatment with dissociating agent. The bacteriocin produced by *L. plantarum* P2 was considered to be heat stable as it retained as it retains its activity after heating at 121°C for 20 min. compared to the bacteriocin produced by *L. brevis* and *L. fermentum* which completely lost its

activity after heating at 100°C for 40 min and 121°C for 20 min respectively and the bacteriocin activity of *L. plantarum* P1 and *L. casai* was significantly decreased with increasing heat treatment. Temperature stability is important if the bacteriocins are to be used as food preservative, because many procedures of food prepatation involve a heating step [8].

The bacteriocin produced by *L. brevis* showed pH stability at acidic pH (2-6) as well as at alkaline pH (8-12) and *L. plantarum* P2 also showed pH stability with some loss of bacteriocin activity and in both cases maximum activity was found in pH 6 where as rest of all bacteriocins were stable only at acidic pH (4-6) and maximum activity was found in pH 6 and they were not stable at extreme acidic and alkaline pH. *L. plantarum* P1, *L. casei* and *fermentum* have completely lost their activity at pH 12. Effect of storage on bacteriocin activity indicated full stability of bacteriocins produced by *Lactobacillus* sp. in study at 20°C during 2 months of storage and partial stability for 1 month at 4°C while no activity was detected after storage for 30 days at 37°C indicating that cold temperature may be the most appropriate preservation technique [9].

Various organic solvents were tested for the extraction of bacteriocin produced by the test isolates. It was observed that extraction with polar solvents such as hexane, di-ethyl ether, and petroleum ether did not result in the removal bacteriocin produced at the aqueous phase to the organic phase, while chloroform extraction completely destroyed the bacteriocins activity. However, when different alcohols such as n-propanol and iso-amyl alcohol were

used in the extraction procedure, bacteriocin was removed from the aqueous phase and recovered from the organic phase. Extraction of bacteriocin in this study using organic solvents indicated that bacteriocin was removed from the aqueous phase and could be recovered from the organic phase.

Lactic acid bacteria synthesize bactericidal agents that vary in their spectra of activity. The largest spectrum of inhibition was exhibited by *L. plantarum* P2, which inhibited 12 out of 13 indicator strains namely *P. aeruginosa*, *L. bulgaricus*, *E. coli*, *B. subtilis*, *B. cereus*, *S. typhimurium*, *Staphylococcus aureus*, *Salmonella paratyphi*, *Shigella dysentery*, *Staphylococcus epidermidis*, *Listeria monocytogenes*, *Enterococcus sp.*, next followed by *L. brevis*, *L. plantarum* P1, *L. casai*. whereas *L. fermentum* showed antibacterial activity of narrow spectrum and mainly inhibited the growth of gram negative bacteria and only a single gram positive bacteria i.e. *Enterococcus sp.* was inhibited [10].

V. DISCUSSION

In the last few decades, tremendous interest has swelled in the potential use of bacteriocins from Lactic Acid Bacteria (LAB). The bacteriocins produced by this group of bacteria are considered potent bio- preservative agents and their application in food is currently the subject of extensive research.

The present investigation highlights the isolation and characterization of bacteriocin producing *Lactobacillus sp.* isolated from Dosa (appam) batter, curd, sauces and cheese. Five Isolated bacteriocinogenic

Lactobacillus sp. were characterized and identified on the basis of their morphological, physiological and biochemical characteristics out of five, two were identified as *L. plantarum* and coded as p1 and P2 due to their different potential in bacteriocin activity and other were identified as *L. casai*, *L. brevis*, *L. fermentum* [11]. Production of bacteriocin was studied in both aerobic and anaerobic conditions. Anaerobic condition was found suitable for maximum production of bacteriocin by all isolates whereas the aerobic condition did not support growth of *Lactobacillus sp.* (as they are anaerobic or microaerophilic bacteria) as well as the production of bacteriocin.

Bacteriocin production by the test isolates displayed secondary metabolic kinetics because all bacteriocin were produced during the pre-and early exponential growth phases, reached a maximum level at late stationary phase. Some reports indicate that bacteriocins are produced throughout the experimental growth phase and not solely during late logarithmic or early stationary phase [12].

VI. CONCLUSION

Based on a wide range of investigations, *L. plantarum* should be considered an important LAB species with excellent anti- microbial activity. Because of that some *L. plantarum* strains can be used as effective biopreservatives in food industry or supporting therapeutic agents in treatment of infections caused by susceptible microorganisms. Antimicrobial compounds produced by *L. plantarum* such as bacteriocins and organic acids, could also be applied as

alternatives of preservatives and therapeutics [13].

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मदकू द्वीप के ऐतिहासिक विग्रह

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शोध-सारांश

मदकू द्वीप हमारी राष्ट्रीय, सांस्कृतिक चेतना का ऐतिहासिक विग्रह है जिसने हमारी उपमहाद्वीप वैविध्य तथा अनेकता में एकता के मूल मंत्र को 'सत्यमेव जयते' का राष्ट्रीय विजय घोष देकर समूचे विश्व में स्थापित किया है यह हमारे आत्मगौरव, आत्ममंथन, आत्मस्थापना की अभिव्यक्ति है जो हमारे गौरवशाली इतिहास को वैश्विक प्रतिनिधित्व के लिए तैयार करती है।

शब्द संकेत— ऐतिहासिक विग्रह, सत्यमेव जयते, आत्मस्थापन, योनिपीठ, कच्छपाकार, पर्यटन-द्वीप, शिलालिपियाँ, धूमेश्वर महादेव, ललाटबिम्ब, अनुसूचन कार्य, शिशु-द्वीप।

I. सैद्धांतिक पृष्ठभूमि

यहाँ का अविस्मरणीय, अगाध, आंतरिक सौंदर्यबोध विशुद्ध छत्तीसगढ़ी माटी के अपूर्व लावण्य को वैश्विक धरा पर अलंकृत करते हैं। यह अप्रतिम पुरातात्विक विरासत हमारी धार्मिक आस्था का सुस्थापित, भव्यतम केन्द्र है। शिवनाथ नदी के सुरम्य वातावरण के मध्य में स्थित यह नन्हा द्वीप संस्कृति, इतिहास तथा पुरातत्व के बहुआयामी पक्षों से हमारा साक्षात्कार कराता है। यह रहस्यमयी निधियों से पूर्ण एक सागर सा विशाल एवं गंभीर विग्रह जान पड़ता है जिसकी मौन स्मित हमारे शाश्वत व समृद्ध इतिहास की साक्षी है। "मदकू द्वीप पर स्थापित श्रीविग्रहों में श्रीधूमनाथ, जलहरी, श्रीगणेश, श्रीराधाकृष्ण, श्री हनुमान, ऋषि माण्डुक्य के आदमकद विग्रह, विभिन्न जीव-विग्रहों के अतिरिक्त श्रीराम केवट मंदिर एक सुंदर विग्रह है, इसमें नौका खेते हुए केवट एवं नौका के मध्य में प्रभु श्रीराम और जनकनंदनी सीताजी विद्यमान हैं तथा नाव के अगले छोर पर श्री लक्ष्मण जी खड़े दिखाई पड़ते हैं[1]। भगवान श्रीराम के आगमन एवं प्रवास की लीला का

एक पड़ाव छत्तीसगढ़ के मुंगेली जिला स्थित ग्राम मदकू क्षेत्र भी रहा है।

विदित है कि अपने चौदह वर्षीय वनवास काल के प्रारंभिक वर्षों में प्रभु श्रीराम, जानकी जी और राम के अनुज श्री लक्ष्मण द्वीप दर्शनार्थ पधारे थे। वे रतनपुर से शिवरीनारायण धाम मदकू द्वीप मार्ग से गए थे। शिवरीनारायण से प्रवाहित नदी शिवनाथ, जोंक एवम् महानदी निर्मित त्रिवेणी संगम के तीर्थ के साथ राजिम तीर्थ एवं तुरतुरिया भी प्रभु गए थे। त्रेता युग के राम-वनवास काल गमन के तार मदकू द्वीप क्षेत्र से भी जुड़े हैं। अपने सुदीर्घ वनवासकालीन अंतराल के महत्वपूर्ण वर्ष प्रभु के छत्तीसगढ़ के विभिन्न स्थलों पर व्यतीत किये जिन में प्रमुख रूप से तपस्थलियाँ, गुरुकुल आश्रम आदि रहे। यह एक तपोवन हुआ करता था जिसके दर्शन लाभ लेने प्रभु यहाँ आए थे।

"मदकू द्वीप की अद्वितीयता के साक्ष्य अनेकों विग्रह यहाँ आपका स्वागत करते हैं। भारतवर्ष में ऐसा प्रथम बार हुआ है कि तेईस मंदिर दक्षिण दिशा से उत्तर दिशा की ओर एक ही पंक्ति में बने हुए मिले हैं। द्वादश ज्योतिर्लिंगी प्रतिकृतियों के साथ यहाँ तेरह स्मार्त लिंग भी प्राप्त हुए हैं[2]। यह इस स्थल के साकार जाग्रत विग्रह है जिन्हें उत्खनन द्वारा प्राप्त किया गया है। शिव की योनिपीठ वाले दो युगल मंदिर, शिवनाथ नदी का ईशान कोण निर्मित कर, प्रवाहित होना। पुरातन ऐतिहासिक, धार्मिक, आध्यात्मिक स्थल होने की समस्त विशिष्टताएँ यहाँ विद्यमान हैं, यह समस्त कारण मदकू द्वीप को भव्य पूजा-पाठ, होम-हवन —यज्ञ, कर्मकाण्डों, शक्ति साधनाओं, व कला-साधनाओं का दिव्य एवं मूर्त विग्रह—स्थल घोषित करते हैं।

II. समस्या का वर्णन

मदकू द्वीप का सांस्कृतिक और ऐतिहासिक महत्व की एक महत्वपूर्ण समस्या हो सकती है। मदकू द्वीप एक प्रमुख पर्यटन स्थल है और यह छत्तीसगढ़ का महत्वपूर्ण दार्शनिक एवं पर्यटन स्थल है। इस शोध के माध्यम से मदकू द्वीप की ऐतिहासिक महत्ता और संस्कृति के लिए जाना जाता है। ऐतिहासिक विग्रहों की खोज महत्वपूर्ण संशोधन कार्य होता है, जिससे विशेष ऐतिहासिक और सांस्कृतिक संदेशों की पुष्टि हो सकती है। इस स्थल के पर्यावरण, भूगर्भीय तालिका, और स्थानीय संस्कृति के प्रति समझ और संवेदनशीलता की आवश्यकता होती है। मदकू द्वीप को देखने के लिए विभिन्न प्रांत से लोग आते हैं। जिसे इसके ऐतिहासिक एवं सांस्कृतिक परिदृश्य को दर्शाने में सहायता मिलती है।

III. शोध-पत्र का उद्देश्य

- मदकू द्वीप का सांस्कृतिक और ऐतिहासिक महत्व को दर्शाना।
- मदकू द्वीप के वर्तमान परिप्रेक्ष्य में ऐतिहासिक परिदृश्य को व्यक्त करना।

IV. वर्तमान परिप्रेक्ष्य में मदकू द्वीप की ऐतिहासिक परिदृश्य

भारतीय परिप्रेक्ष्य में महिलाओं के सशक्तिकरण के लिए बाहरी प्रेरणाओं की जरूरत है। जो संगठनिक व कार्यकारी दृष्टिकोण से समूह को सशक्तिकरण प्रदान कर सकें। वृहद तौर पर साक्ष्यों के माध्यम से स्पष्ट होता है कि जमीनी स्तर की महिलाओं को बहुत कम ज्ञान है। उन्हें संवैधानिक सुरक्षा की जरूरत है। उनके अधिकारों व समानता के लिए एक ऐसे माध्यम की जरूरत है जो उनके समुचित विकास के लिए प्रतिबद्ध हो। प्रस्तुत अध्ययन में उपरोक्त सभी बातों को ध्यान में रखते हुए महिला विकास में स्वसहायता समूह, रोजगार सृजन एवं कौशल विकास में भूमिका का अध्ययन करने का प्रयास किया गया है। यह शोध कार्य अर्थशास्त्र के क्षेत्र में भारतीय ग्रामीण विकास व रोजगार सृजन संबंधी योजनाओं के विषय में नवीन परिकल्पनाएँ नियम एवं सिद्धान्त बनाने में सहायक होगा।

“मदकू द्वीप पर अद्भुत विग्रहों की भरमार है जैसे कच्छपाकार विग्रह जो इसे श्री विष्णु पुराण में वर्णित

द्वीप से जोड़ते हैं। विष्णु पुराण में इस द्वीप के लक्षणों को प्रकट किया गया है। माण्डुक्य ऋषि द्वारा माण्डुक्योपनिषद् सृजन की इस स्थली का राष्ट्रीय विजय घोष ‘सत्यमेव जयते’ का उद्घोष करने वाला कीर्ति-स्तम्भ है[3]।

भारतीय राजपुरुषों द्वारा धार्मिक, सांस्कृतिक तथा आध्यात्मिक अनुष्ठान सम्पन्न किये जाने सम्बन्धित विभिन्न प्रमाण यहाँ मिले हैं। प्रागैतिहासिक काल के प्राप्त साक्ष्य इस द्वीप को प्राथमिक श्रेणी के ऐतिहासिक शोध-स्थल के रूप में स्थापित करते हैं। सभी प्राप्त साक्ष्यों की उपस्थिति मदकू द्वीप को सर्वोच्च महत्व के प्रागैतिहासिक, आध्यात्मिक, सांस्कृतिक, धार्मिक, सभ्यता एवं संस्कृति के केन्द्र-स्थल के रूप में धरा पर प्रतिष्ठापित करते हैं।

इतिहास के एक विवादास्पद विषय के रूप में लिए जाने वाले सती-प्रथा की उपस्थिति के प्रमाण भी मदकू द्वीप पर चिन्हित हुए हैं। ज्ञातव्य है कि मदकू द्वीप के मध्य – पूर्व दिशा में निर्देशित स्थलों तथा ग्रामों के उत्खनन की महती आवश्यकता है जिससे यहाँ से प्राचीन सभ्यता के विकास-क्रम व चरणबद्ध प्रगति के पुरातात्विक प्रमाणों को उपलब्ध किया जा सके। विदित अनेकों साक्ष्य शिवनाथ नदी के तटवर्ती इलाकों से प्राप्त हुए हैं जो इस स्थल के ऐतिहासिक आस्तित्व को प्रमाणित करते हैं। फलतः आदिमानवों के निवास एवं संचरण के प्रमाण इस द्वीप को महत्वपूर्ण बनाते हैं।

द्वीप का नैसर्गिक सौंदर्य आध्यात्मिक वातावरण को सृजित कर आध्यात्मिक वातावरण को सृजित कर आध्यात्मिक जिज्ञासुओं का आवाहन करते हैं। मदकू द्वीप का अविस्मरणीय, अगाध, आंतरिक सौंदर्यबोध विशुद्ध छत्तीसगढ़ी माटी के अपूर्ण क्रांति व लावण्य को वैश्विक धरा पर सुशोभित करते हैं यह अप्रतिम, पुरातात्विक विरासत हमारी व्यापक धार्मिक अवधारणा एवं आस्था का सुस्थापित भव्यतम केन्द्र है।

“मदकू द्वीप में नित्य-निरंतर आयोजित होने वाले पर्व, तीज-त्यौहार, उत्सव आदि आगंतुक-अभ्यागतों, श्रद्धालुओं व दर्शनार्थियों एवम् सैलानियों को आध्यात्मिक सम्पन्नता तथा असीम शांति का वरदान उपहार स्वरूप प्रदान करते हैं। सामाजिक सद्भावना पूर्ण अद्भुत संगम व समागम स्थल मदकू द्वीप

जीवंत-जाग्रत संकल्पों के साकार विग्रहों से भरपूर एवं परिपुष्ट द्वीप है। सामाजिक समरसता के वृद्धिकारक उत्सव, जलसे, उल्लासपूर्ण उत्सव, जैसे पौष पूर्णिमा (छेरछेरा पुन्नी) के समय यहाँ सात दिवसीय आयोजन, शिवरात्रि (फाल्गुन अमावस्या) और हनुमान जयन्ती (चैत्र पूर्णिमा) के अवसरों पर भव्य, विशाल मेलों का आयोजन किया जाता है जो दर्शनीय है[4]।

“हिन्दू धर्म के साथ-साथ ईसाई धर्मावलम्बियों के लिए भी मदकू द्वीप एक पवित्र तीर्थ है। प्रतिवर्ष मदकू द्वीप पर फरवरी माह में साप्ताहिक मेले का आयोजन होता है जिसमें दूर-दराज से जन समूह आते और प्रतिभागिता प्रदान करते हैं। इस दौरान विभिन्न धार्मिक, सांस्कृतिक महत्व के कार्यक्रमों का मंचन किया जाता है[5]। संगीतबद्ध प्रातः प्रभात-फेरी इसके विशिष्ट आयोजनों में से एक है।

शिवनाथ नदी के सुरम्य वातावरण के मध्य स्थित यह नन्हा द्वीप संस्कृति, इतिहास तथा पुरातात्विक बहुआयामी, मौलिक पक्षों का कर्णधार है। साथ ही यह विशिष्टतम तथा सर्वोत्कृष्ट कोटि का पर्यटन द्वीप भी है यह ईशान, शैव क्षेत्र धर्म और आध्यात्म का सम्मिलन-क्षेत्र है। यहाँ के प्राणवायु में सहृदयता की सुवास रची बसी है। हम इसे तपोस्थली, तीर्थ क्षेत्र, रहस्यमयी निधियों का संचय द्वीप, दिव्य विचित्रताओं का संभावित क्षेत्र, प्राचीनता और उद्भवों का संचरण क्षेत्र, नवोन्मेषों, शोध-अनुसंधानों, अन्वेषणों के वैज्ञानिक उद्देश्यों का केन्द्र, आत्म-साक्षात्कार के अवतरण का जनक तपक्षेत्र कहें तो भी कोई अतिशयोक्ति नहीं होगी क्योंकि मदकू क्षेत्र में निहित दिव्यताओं एवं विशिष्टताओं की तुलना में ये समस्त विभूतियाँ मात्र शाब्दिक अलंकरण होने तक परिसीमित एवम् सीमांकित हैं। ऐसे महात्म्य पूर्ण स्थलों की पुकार है इनका पर्याप्त संरक्षण एवम् संवर्द्धन। इन के पुरावैभव सहेजने व सँवारने से और उचित सुरक्षा प्रबंधन द्वारा इनकी सुरक्षा संभव है। अब तक पूर्ण सराहनीय पुरुषार्थों की प्रगतिशील परम्परा को नितान्त निरन्तरता व गति प्रदान किये जाने से इनका संरक्षण तथा संवर्द्धन संभव है।

सत्य है कि मदकू द्वीप का उत्खनन एक आकस्मिक घटना नहीं होकर सतत् प्रयासों, संघर्षों, जीवटताओं, जीजिविषाओं का परिणाम है। जो ज्ञात है उससे कहीं

गुना अधिक अनुपात में ज्ञात किया जाना शेष है। प्राप्त तथ्यों से मालूम होता है कि किसी काल में आई भीषण बाढ़ की चपेट में आकर मदकू द्वीप पर स्थित समस्त विग्रह, देवगृह और अन्य इमारतें एवम् वस्तुएँ ढहते गए और इस प्रकार भूसतह से 1.50 मीटर नीचे दब गए जिसका पता उत्खनन श्रृंखलाओं द्वारा संभव हुआ। वर्तमान परिस्थितियों में यहां रेत माफिया सक्रिय हैं जो इस पौराणिक एवं ऐतिहासिक धरोहर को खतरे में डाले हुए हैं शिवनाथ नदी में एक मीटर तक शिल्ट पाया जाता है जो पूर्व में आई जल विभीषिका एवम् आप्लावन का सूचक है। यहां लाल बलुआ पत्थर भी पाए जाते हैं।

द्वीप से उत्खनन में प्राप्त दो उल्लेखनीय शिलालिपियाँ अत्यन्त महत्वपूर्ण हैं जिन में रहस्यमयी सांकेतिक शैली उत्कीर्ण है। इनमें दो प्रकार की भिन्न लिपियों को उकेर कर संकेत प्रदान किए गए हैं जो गहन शोध का विषय है। इनमें से प्रथम शिलालेख में एक देवता का वर्णन आता है, साथ ही एक अक्षय निधि सम्बन्धित जानकारी भी प्रदान की गई है। “यह शिलालेख ब्राम्ही/प्राकृत में एक खंडित शिलालेख है। यह तीसरी शताब्दी सीई (एपेंडिक्स बी 173) के पात्रों में अमूल्य निधि के विषय में जानकारी प्रदान करता है[6]। द्वितीय शिलालेख शंखलिपि के सुन्दर अक्षरों से सृजित है जिसके विशेष में ज्ञात सूचना प्रागैतिहासिक काल से कलचुरि काल तक मदकू द्वीप और उसके आसपास के क्षेत्रों में मानव द्वारा संचरण एवम् लेखन, स्थापत्य और मूर्तिकला की प्रगति को चिन्हित करते हैं।

प्रमुखतः शैव संस्कृति प्रधान वास्तु खण्ड यहाँ से प्रचुरता में प्राप्त हुए हैं। धनमंथेश्वर स्थित 10 वीं से 11 वीं शताब्दी का प्राचीन शिव मंदिर और दाहिनी दिशा की ओर चलने पर उत्तर दिशा में प्राचीन घाटियाँ पड़ती हैं, जहाँ से अजस्त्र, अविरल, अबाधित जलराशि का स्त्रोत प्रवाहमान है। यह अभिलेख जो ब्रम्ह और शंख लिपि में हैं यहीं से मिले हैं। विभिन्न प्रागैतिहासिक काल के लघु पाषाण शिल्प एवं उपकरणों की भी प्राप्ति हुई है। यहाँ से पुरातात्विक उत्खनन में गुप्तुन और कलकत्ता की नक्काशी की प्राचीन प्रतिमाएँ मिली है।

बकुल वृक्ष के नीचे से विलक्षण दक्षिणावर्त कलचुरीकालीन चतुर्भुजी नृत्य गणेश का विग्रह भी एक अनुपम, प्राचीन, कलात्मक शिल्प का उत्कृष्ट उदाहरण

है। प्रतिमा यह बताती है कि किसी काल में यह ललित कलाओं एवम् विभिन्न विधाओं की साधना स्थली था। मूर्तिकला विज्ञान विशेषज्ञों के अनुसार यह प्रतिमा साधना एवं सिद्धि का प्रतीक हुआ करती थी। यह प्रतिमा धरती पर एक तपस्वी के स्वप्न फलादेश स्वरूप उद्भूत हुई है।

यह प्रयास सतत् निष्ठा, लगन और समर्पण भाव से जुटे कृत संकल्पित हमारे खोजकर्ताओं, पुरातत्त्वविदों, पुरा विशेषज्ञों, विद्वज्जनों, क्षेत्रीय वरिष्ठ जनों, श्रद्धालुओं, मुमुक्षुओं एवं मदकू द्वीप की विलुप्तप्राय सभ्यता को प्रकाश में लाने वाले विश्वासी जनों, साथ ही साथ समस्त कर्मठ व सक्रिय विशिष्ट जनों एवम् सामान्य, सर्वसाधारण जन नागरिकों के दीर्घ कालीन, निरन्तर कर्मशीलता के रूप में सक्रिय, सकारात्मक भागीदारी का ही प्रतिफल एवं परिणाम है जो वर्तमान में हमारे समक्ष मदकू द्वीप के सफल, सार्थक, अस्तित्व के रूप में प्रत्यक्ष होकर विद्यमान हैं।

राजकीय, प्रशासनिक, शासकीय पक्ष से प्राप्त सहयोग की प्रतिबद्ध भूमिका के संवहन की अनुपस्थिति में यह सम्भव नहीं हो पाता। अतः इसी प्रतिबद्ध एकजुटता की भावना सहित आगामी संरक्षण, संवर्द्धन, संभावित खोज व शोध योजनाओं पर कार्य किया जाने से अनेकों नवीन रहस्यों की नूतन योजनाओं पर कार्य किया जाने से अनेकों नवीन रहस्यों की नूतन परतें खुलेंगी। पूर्व में उत्खनन की प्रक्रिया द्वारा आदिकालीन मानव जीवन के सामाजिक और आर्थिक जीवन-शैली को प्रकाशित करने वाली अत्यन्त महत्वपूर्ण पूरा-सामग्री की प्राप्ति हुई है। विभिन्न प्राप्त वस्तु-सामग्रियों में सिक्के, लौह धातु से निर्मित बाण एवम् अन्य पात्र जैसे- कीलें, कड़े, घण्ट और कांस्य धातु से निर्मित कंगन तथा तौबे से निर्मित सिक्के तथा आभूषणों में नथनी प्रमुख है।

उत्खनन से मदकू द्वीप से कल्चुरि तथा परवर्ती कल्चुरि काल के उन्नीस प्रस्तर देवमंदिरों के भग्नावशेष मिले हैं, सम्बन्धित अनेक अन्य विग्रह भी प्रकाश में आए हैं। प्रमाणित आधारों पर इन्हें 10 वीं से 15वीं ईस्वी के मध्यकाल से सम्बद्ध बताया जाता है। द्वीप के उत्खनन से छह शिवालय और तेरह स्मार्तलिंग प्रकाश में आए हैं। उमा-महेश्वर तथा गरुडासीन श्रीलक्ष्मीनारायण के सुन्दर विग्रह भी प्राप्त हुए हैं। जलेश्वर महादेव को मिलाकर यहाँ सात शिवालय स्थित हैं। प्राचीन योनिपीठ के आधार पर मदकू द्वीप पर मढ़िया में

धूमेश्वर महादेव नामक प्रचलित शिवलिंग स्थापित हैं शैव मंदिरों के और भी अधिक संख्या में स्थापत्य एवम् वास्तु-विग्रह प्राप्ति की संभावनाओं से परिपूर्ण है यह मदकू द्वीप क्षेत्र।

उत्खनित विग्रहों के अंतर्गत विभिन्न पाषाण निर्मित प्रतिमाओं की प्राप्ति हुई है। उक्त प्रतिमाओं में शैव परिवार की मूर्तियों के अन्तर्गत नृत्य गणपति, कार्तिकेय, शिव वहन नन्दी, भैरव तथा श्री उमा-महेश्वर प्रमुख हैं। शैव धर्म की सहचरी के रूप में मदकू द्वीप पर वैष्णव धर्म से सम्बद्ध विग्रहों के अनन्तर अंबिका एवं महिषासुरमर्दिनी जगदंबा की मूर्तियाँ प्राप्त हुई हैं।

मदकू द्वीप से विशिष्ट रूप से अनुरक्षण कार्य के समय से एक ललाटबिम्ब की प्राप्ति भी हुई थी। इस बिम्ब पर सुन्दर कलाकृतियाँ सुशोभित हैं। इन के पार्श्व भागों में माता लक्ष्मीजी और सरस्वतीजी की लघु आकृतियाँ उकेरी गई हैं। इस प्रकार यह क्षेत्र धार्मिक विग्रहों की विविधताओं से परिपूर्ण हैं।

मदकू द्वीप के उत्खनन से छत्तीसगढ़ प्रदेश के मध्यकालीन ऐतिहासिक सभ्यता एवं संस्कृति पर विशेष प्रकाश पड़ता है। मध्यकालीन विग्रहों में वेणुवादक कृष्ण, भृत्य, उपासनाकर राजपुरुष योद्धा, महिषासुरमर्दिनी, चतुर्भुजी गणेश, अम्बिका आकर्षण के केन्द्र हैं।

स्मार्त प्रथा का महत्वपूर्ण केन्द्र होने के साथ यह धर्म सहिष्णुता का जीवंत एवम् जाग्रत स्थल है। उत्खनन से प्राप्त लाल बलुआ पत्थर निर्मित उन्नीस मंदिरों के विशिष्ट समूह दर्शनीय हैं। इन मन्दिरों में मध्य क्षेत्र का मन्दिर सबसे वृहदाकार का है जो पश्चिमाभिमुख है, जबकि इसके पार्श्वों की ओर के स्थित मन्दिर पूर्व दिशा की ओर मुख किए स्थित हैं। यह दूरी में वृद्धि के साथ क्रम से अवरोही विधि से आकार में छोटे होते जाते हैं।

“राजपुरुषों की उपासना की मुद्रा में मिले विग्रह अभिव्यक्त करते हैं कि रतनपुर के कलचुरि शासकों और वंशजों का यहाँ वर्चस्व रहा है। इन शासकों ने इस क्षेत्र में अनेक देवालयों, उपासना-स्थलों, यज्ञ स्थलों आदि का निर्माण करवाया है। यहाँ राजा प्रतापमल्लदेव (1198-1218) के काल की ताम्र निर्मित

मुद्रा भी प्राप्त हुई है[7]। यहाँ से कलचुरि काल के सांस्कृतिक, सामयिक, धार्मिक, सामाजिक, आर्थिक एवम् आध्यात्मिक पक्षों के प्राकट्यीकरण का केन्द्रीय महत्व तथा पुरावैभवशाली महान इतिहास ज्ञात होता है।

V. निष्कर्ष

मदकू द्वीप की बहुगुणित विशेषताओं एवम् विशिष्टताओं में एक उपाधि और जुड़ती है जिसके अनुसार मदकू द्वीप तात्कालीन नवगठित छत्तीसगढ़ राज्य के मुंगेली जिले का प्रथम उत्खनित पुरास्थल होने का गौरव प्राप्त है। रतनपुर के कलचुरि शासकों के शासनकाल के समय में मदकू द्वीप को धार्मिक, सांस्कृतिक और आध्यात्मिक विकास की सही दिशा में गति करने के अवसर प्राप्त हुए। इस प्रकार यह स्थल अपनी विशिष्टताओं को प्रकट करने की दिशा में प्रगति की ओर द्रुतगामिता पूर्वक अग्रसर हुआ। मदकू द्वीप के पुरावैभव को पुनर्जीवन प्रदान करने का श्रेय कलचुरि राजवंश को भी प्रमुख रूप से जाता है। आध्यात्मिक ईश्वरीय विग्रह का साकार संकल्प द्वीप यह नन्हा मदकू द्वीप वास्तविकता में रहस्यमयी निधियों से पूर्ण एक सागर सा विशाल तथा गंभीर विग्रह प्रतीत होता है, जिसकी मौन स्मित हमारे शाश्वत व समृद्ध इतिहास की साक्षी है। यह इस धरातल पर सृष्टि के आदि-अनादिकाल से स्थापित एक प्राकृतिक देवसंकुल अनुभूत होता है। परंपराओं के संवहन का प्रतीक यह द्वीप विभिन्न सभ्यताओं तथा संस्कारों के योग का प्रतिष्ठित केन्द्र है। यह एक लघु उपमहाद्वीप के सदृश दैदीप्यमान प्रकृति का अनमोल नैसर्गिक उपहार है। तप की ऊर्जा से स्निग्ध किरण रश्मियाँ इसकी सुनहरी आभा में चार चाँद लगाती हैं। इसकी सहचरी शिवगंगा सदैव अमृतमयी जलधारा के रूप में जीवन के स्रोत रूप में गतिशील है। धन-धान्य दायिनी छत्तीसगढ़ी की माटी का यह शिशु-द्वीप अपने मांगलिक स्वरूप में स्थित चैतन्यता का प्रदायक है, जिससे असीम शांति, प्रसन्नता, उत्फुल्लता, स्थिरता, निर्मलता, ऐश्वर्य और माधुर्य की प्राप्ति होती है। ऋषि एवम् दैवीय सत्ताओं के तप के रूप में प्रवाहित प्राण-ऊर्जा आज भी मदकू द्वीप के अस्तित्व में जीवंत, जाग्रत होकर साक्षात् प्रतिष्ठित सत्य स्वरूप विद्यमान है।

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Effect of environmental factors on the performance of Solar PV plant under various climates

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Abstract—As solar energy continues to be a pivotal player in the renewable energy landscape, understanding its vulnerability and adaptability to varying environmental parameters becomes imperative. The study provides an extensive analysis of the multifaceted relationships between environmental factors such as temperature, humidity, irradiance, and dust accumulation and their effects on the efficiency and reliability of solar PV installations. By synthesizing findings from a wide range of research articles, case studies, and experimental data, this review offers comprehensive insights into the challenges and opportunities posed by different climates on PV system operation. Furthermore, the paper explores various mitigation strategies and technological advancements that have been developed to enhance the resilience of solar PV plants in adverse environmental conditions. These strategies encompass innovative cooling mechanisms, dust mitigation techniques, and advanced monitoring and control systems. By presenting a holistic view of the intricate interplay between environmental factors and solar PV performance, this work aims to contribute to the development of sustainable and climate-adaptive PV systems. The knowledge synthesized herein can guide policymakers, researchers, and industry stakeholders in making informed decisions and driving the continued growth of solar energy as a clean and reliable power source worldwide.

Index Terms - Solar PV plant, Performance analysis, Simulation tool, PV syst.

I. INTRODUCTION

The development of non-conventional power resources has emerged as an effective way to protect our planet in light of the rapidly changing global energy landscape. This transformation is characterized by dwindling conventional fossil fuel resources and a continuous rise in greenhouse gas emissions, contributing to the ongoing challenge of climate change [1]. The momentum behind renewable energy adoption is growing incessantly as a means to cater to escalating

electricity demands while concurrently curbing the carbon footprint [2].

Solar photovoltaic (PV) technology stands at the forefront of this renewable energy revolution. Its appeal lies not only in its ability to harness energy from an abundant and virtually inexhaustible source—the sun—but also in its capacity to reduce dependence on finite fossil fuels and mitigate the harmful environmental impacts associated with their extraction and combustion [3]. Solar PV offers a clean, sustainable, and scalable solution that aligns with global efforts to transition towards a low-carbon energy future. Solar PV technology, affected by various environmental factors across diverse climates [4].

By comprehensively examining the effects of temperature, humidity, irradiance, and dust accumulation, we aim to provide a deeper understanding of how these factors influence the performance and reliability of solar PV systems. Elevated temperatures can reduce module efficiency, while increased humidity may enhance electrical conductivity [5]. Solar irradiance directly impacts energy production, with varying weather conditions affecting output [7]. Research has explored these interactions, leading to strategies like temperature management and weather forecasting to optimize PV system performance. Understanding these environmental factors is vital for efficient and reliable solar energy generation. Additionally, we explore innovative strategies and technological advancements aimed at optimizing PV system operation under challenging environmental conditions.

II. EFFECT OF ENVIRONMENTAL PARAMETERS

The PV modules need to be positioned in the open air, directly exposed to sunlight. Consequently, the operational effectiveness and efficiency of the PV module are significantly affected by various environmental

parameters, including temperature, soiling, wind, shading, humidity, and more (Fig I). Subsequent sections will delve into how these factors impact the PV module's performance.

A. EFFECT OF IRRADIANCE

The influence of irradiance on solar photovoltaic (PV) module performance is a well-documented and critical aspect of PV system operation. Solar irradiance, characterized by the intensity of sunlight, profoundly affects PV module efficiency and power output.

Numerous studies have explored this relationship, highlighting the direct proportionality between irradiance and PV module performance [8]. As solar irradiance rises, so does the PV module's output, in accordance with previous research. The PV module output power and irradiance characteristics demonstrate an almost linear relationship. Existing literature suggests that quantifying the impact of solar irradiance on PV panel performance with a specific percentage is impractical, given the linear correlation between module current and irradiance levels [9]. Higher irradiance levels lead to increased electron excitation and enhanced electricity production, making solar modules more efficient and productive [7]. Conversely, reduced irradiance, due to factors like cloud cover or shading, can significantly diminish module output. Researchers have developed mathematical models and algorithms to predict PV module performance under varying irradiance conditions, aiding in system design and optimization [10].

These findings underscore the importance of considering irradiance levels in PV system planning and highlight the need for technologies like tracking systems and energy storage to mitigate the effects of fluctuating sunlight. Overall, understanding the impact of irradiance on PV modules is crucial for harnessing solar energy efficiently and reliably.

B. EFFECT OF OPERATING TEMPERATURE

The performance of Solar photovoltaic (PV) systems are highly dependent on the operating temperature. Temperature influences the operation of PV modules, impacting their electrical output and overall performance.

Temperature affects solar PV performance primarily through its impact on the semiconductor materials used in PV cells. Most PV cells are made from crystalline silicon, amorphous silicon, or thin-film materials. These materials

have temperature-dependent electrical characteristics that directly influence the PV module's performance [11]. An increase in temperature generally results in a decrease in the open-circuit voltage (V_{oc}) and an increase in the short-circuit current (I_{sc}) [12]. This means that the maximum power point voltage (V_{mp}) decreases, leading to a reduction in the overall power output of the PV module [13]. Manufacturers often provide temperature coefficients to help quantify these effects, aiding in system design and performance estimation.

Studies have consistently shown that an increase in temperature leads to a reduction in the efficiency of PV modules. For crystalline silicon-based PV cells, the efficiency typically decreases by around 0.4% per degree Celsius increase in temperature above the standard test condition (STC) of 25°C [14]. This decline is attributed to several factors, including increased electron-hole recombination rates, reduced carrier mobility, and a shift in the spectral response of the cells. In 2018, Yadav and Bajpai conducted an analysis on a rooftop grid-connected system in North Indian climatic conditions. They found that as the cell temperature increased, capture losses also increased annually by up to 6.34%.

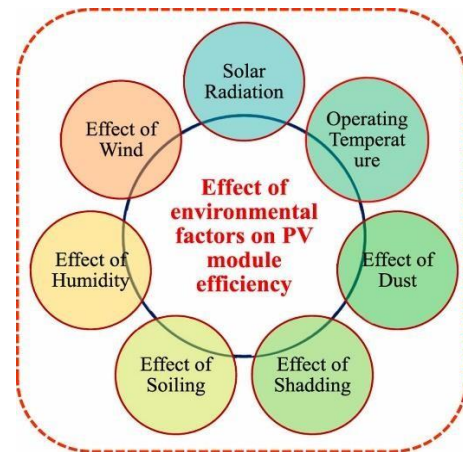


Fig I: Effect of environmental factors on PV module efficiency [15].

Furthermore, higher temperatures can also cause the modules to experience a phenomenon known as thermal stress, which can degrade the materials and reduce their lifespan. This can have long-term implications for the overall performance and cost-effectiveness of solar PV systems.

C. EFFECT OF SOILING

Soiling refers to the accumulation of dirt, dust, or pollutants on the surface of solar collector, which can

diminish their efficiency and effectiveness (Fig II). It often results



Fig II: Different types of soiling.

from environmental factors such as wind, precipitation, and air pollution and requires periodic cleaning or maintenance to restore optimal performance [16]. Dust accumulation significantly impairs collector performance. El-Nashar [17] examined how dust buildup impacted the performance of evacuated tube collectors in a large collector field. The study revealed that accumulated dust significantly reduced collector efficiency. Hassan et al. [18] found that airborne dust significantly reduces PV performance in Egypt, causing a 33.5% to 65.8% drop over 1-6 months. Dust accumulation in desert regions like Iraq, Egypt, and UAE can cut PV output by 10-20% (8). Ndiaye A et al. [19] reported up to 78% Pmax loss for mc-si and pc-si modules. In Cairo, Elsherif and Kandil [20] monitored a PV module's performance, noting a 25% efficiency drop in the first two months and a 40% decrease after a year. Similarly, Said [21] investigated dust accumulation's effects in maritime-desert-zone environments on various solar collectors, including flat-plate collectors, evacuated tube collectors with cylindrical reflectors, and PV panels. The research identified a monthly 7% efficiency degradation rate for photovoltaic panels.

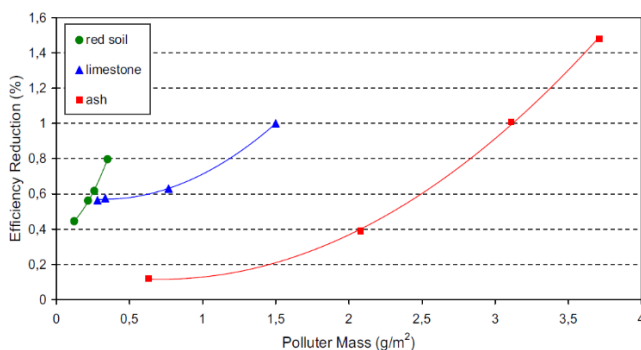


Fig III: PV panel efficiency variations with different pollutant mass depositions, comparing clean and polluted panels.

A study reveals that different pollutants have varying impacts on photovoltaic (PV) panel performance. Red soil deposition has the most significant effect, reducing energy generation by nearly 7.5% at 0.35 g/m². Limestone follows, causing a 4% reduction at 0.33 g/m², while carbon-based ash has a smaller 2.3% decrease at 0.63 g/m². Figure III illustrates the exponential trend in dust deposition's impact on PV panels.

D. EFFECT OF HUMIDITY

Humidity is the measure of water contents in the atmospheric air. The presence of humidity in the atmosphere provides a diffraction path to the incoming sunlight [22]. Resultant, the effective solar radiation, reaching the panel surface reduces. This may affect the performance of PV panels which are constantly operating in high humid zone areas [23].

Kazem et. al., was reported that the panel output degrades up to 28.77% due to increase of 42.07% in relative humidity [24]. Another study on panel performance under humid zone shown that its efficacy reduces up to 32.42% when the humidity level increases to 6% and panel was operating at 58 °C [25]. Whenever, the PV panel is continuously subjected to high humid environment, for a long period, some of the moisture contents enter into the glass of the panel and starts delaminating the cells of the panel. Consequently, the life span of the panel reduces which affects the operation of PV panel system [26]. In another research, it was noted that when the humidity level increased by 50.15%, there was a corresponding decrease of 24.05% in the amount of solar radiation reaching the surface of the panel. Additionally, this study demonstrated that a 50.15% increase in relative humidity led to a 36.22% reduction in the output power of the panel [22].

Even though, the humidity deteriorates the performance of the panel but it may act as the cooling agent for the high temperature zones by providing some sort of cooling to the panel surface. Therefore, it is necessary to know the rate of cooling of the panel surface due to the relative humidity. Since, very limited literatures are available which have reported the effect of humidity on the performance of photovoltaic panel, it is necessary to understand the role of humidity on PV panel operation so that the panel can perform efficiently in high humidity areas [27].

E. EFFECT OF WIND

The interaction between wind and photovoltaic (PV) modules significantly influences their output power. Wind can have both positive and negative effects on PV performance [28]. On one hand, moderate airflow can cool PV modules, enhancing their efficiency by reducing temperature-related losses. By dissipating excess heat from the module's surface, wind can enhance its performance. Numerous studies have shown that increased wind speeds correlate positively with improved thermal management and increased output power [29]. Schwingshackl et al. [30] conducted a numerical study on wind's impact on PV module temperature. They explored various techniques and identified the significant role of wind cooling in power estimation. According to Koehl et al., [31] when exposed to wind speeds of 10 m/s and solar irradiance around 1000 W/m², there is a wind-induced cooling effect of approximately 15-20°C.

However, excessive wind speeds can lead to mechanical stress, potentially damaging the modules and decreasing their efficiency [26]. Wind-induced dust and debris can also accumulate on PV surfaces, further diminishing their output. Counterintuitively, this effect is most pronounced in arid regions, where strong winds often carry fine dust particles. Proper module maintenance and periodic cleaning are essential to mitigate this negative impact [32]. In an outdoor experiment conducted by Kaldellis et al. [33], the influence of temperature and wind speed on PV performance was investigated. The results revealed that with each rise in temperature (in degrees Celsius), PV efficiency decreased by approximately 0.3% to 0.45%.

Therefore, a delicate balance exists between the wind's cooling benefits and its potential drawbacks. Effective design and monitoring strategies are essential to optimizing PV output in varying wind conditions. Further research is needed to develop strategies for harnessing wind's benefits while mitigating its adverse consequences on PV modules.

F. EFFECT OF SHADING

Shading profoundly affects the performance of solar photovoltaic (PV) modules. When even a small portion of a PV panel is shaded, it can lead to dramatic reductions in overall energy output [34]. This is due to the interconnected cells within the module, where shading on one cell disrupts the entire string, causing current mismatches and power losses. Hariharasudhan et al., [35] performed a comparative analysis of polycrystalline and

bifacial photovoltaic module under various partial shading conditions. They found that the average loss due to frontside partial shading is 26% lower in bifacial photovoltaic module than in polycrystalline.

Researchers have extensively examined strategies to mitigate shading effects, such as bypass diodes and panel placement optimization. Additionally, advanced technologies like micro-inverters and power optimizers have emerged to address partial shading challenges [36]. Understanding and managing shading is critical to maximizing PV system efficiency and overall energy production.

III. CONCLUSION

Environmental factors such as solar radiation, temperature, wind speed, rainfall, and humidity exert a substantial influence on the operational efficiency of photovoltaic (PV) systems. Understanding and analyzing these factors are crucial for accurately assessing PV system performance.

As the global shift towards renewable energy intensifies, in-depth research into parameters affecting performance becomes increasingly vital. This review will drive advancements in PV technology, yielding more efficient and dependable systems capable of harnessing solar energy optimally across diverse environmental conditions. By addressing performance issues associated with these factors, we can unlock the full potential of PV technology, fostering sustainable and resilient energy solutions for the future.

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Comparative Analysis of Occupational Stress & Social Adjustment among Physical Education Teachers working in Government and Public Schools of Jammu and Kashmir U.T.

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Abstract

The purpose of the study was “to compare the level of Occupational Stress and level of Social Adjustment among Physical Education Teachers working in Government and Public Schools of Jammu and Kashmir U.T.” It was hypothesized that there might be a significant difference in relation to the level of occupational stress between the Male Physical Education Teachers working in Government Schools and Public Schools, Female Physical Education Teachers working in Government Schools and Public Schools, Male and Female Physical Education Teachers working in Government Schools, Male and Female Physical Education Teachers working in Public Schools of Jammu and Kashmir U.T. It was also hypothesized that there might be a significant difference in relation to the level of social adjustment among Female Physical Education Teachers working in Government Schools and Public Schools and Male and Female Physical Education Teachers working in Government Schools. It was also hypothesized that there might not be a significant difference in relation to the level of social adjustment among the Male Physical

Education Teachers working in Government and Public Schools of Jammu and Kashmir U.T. It was also hypothesized that there might not be a significant difference in relation to the level of social adjustment between male and female Physical Education Teachers working in Public Schools of Jammu and Kashmir U.T. It was also hypothesized that there might not be a significant difference in relation to the level of occupational stress between the Male and Female Physical Education Teachers working in Government and Public Schools of Jammu and Kashmir U.T. For the purpose a total of 600 male and female Physical Education Teachers (150 male & 150 female) working in Government Schools (150 male & 150 female) and in Public Schools from the Jammu and Kashmir U.T. were selected as the subjects. The age groups of the Physical Education Teachers under study were ranged from 25 - 40 years only. Keeping the feasibility in mind and the importance of socio-psychological aspects, the following variables were selected for the purpose of the study: Occupational Stress and Social Adjustment.

Index Terms-Occupational Stress and Social Adjustment.

I. INTRODUCTION

In the olden days there was no concept of property. The society was almost egalitarian and there was no specialization as far as the occupation was concerned. The society was economically independent and people got satisfied their hunger out of the natural fruits and vegetation which naturally grew on earth. Hence, we can say that in the olden days a person was almost free from the concept of occupational stress. But this world of ours, founded upon science and technology, is highly mechanized and materialistic. Thus, as a result the life has become quite challenging and competitive at all levels. Those who don't have money or resources try to find it and those who not have, make efforts to get more. The executives are worried about low productions in the company, businessmen are worried about low profit and workers are worried about their job security and low wages. Now days the world has become a global village and a lot of luxuries have come to the market. People want to get them all but are unable to afford. As a result, they develop a kind of dissatisfaction among themselves. There are various conditions in the work life like, excessive work, poor remuneration, nepotism and corruption and poor boss – employee relationship that also make them dissatisfied and stressed. Stress at work resulting from increasing complexities of work and its divergent demand has become a prominent and pervading feature of the modern organizations. The term sociology is the combination of Latin word society meaning science or study. Thus etymological meaning of sociology is the study of society and man's behaviour pattern that enables a person to get along with his/her personal, academic, social adjustment and emotional demands of the society settings. In other words, sociology is the study of man's behaviour in group or the interaction among human beings, of social relationship and the processes by which human group activity take place. Sociologists study behaviour in term of the social conditions and cultural contexts in which people live their

lives. Sociologists focus on the reality outside and around individuals. Therefore, socialists deal with how people form relationship with one another and create social arrangements that enable them to survive and exert some control over their lives. Sociologists also ask questions about how behaviour, relationships, and social life are related to characteristics that are defined as social relevant by people in particular groups. This is why they often deal with the social meaning and dynamic associated with age, social class, gender, race ethnicity, disability, and nationality [1].

II. Objectives of the Study

1. To find out the level of Occupational Stress of Male and female Physical Education Teachers working in Government schools of Jammu and Kashmir U.T.
2. To find out the level of Occupational Stress of Male and female Physical Education Teachers working in Public schools of Jammu and Kashmir U.T.
3. To find out the level of Social Adjustment of Male and female Physical Education Teachers working in Government schools of Jammu and Kashmir U.T.
4. To find out the level of Social Adjustment of Male and female Physical Education Teachers working in Public schools of Jammu and Kashmir U.T.

III. Delimitations

1. The study was delimited to a total of 600 male and female Physical Education Teachers. Further, the study was delimited to Physical Education Teachers working in Government Schools and Public Schools of Jammu and Kashmir U.T. only.
2. The age groups of the Physical Education Teachers under study were ranged from 25 - 40 years only.

IV. Limitations

1. Certain factors like personal lifestyle, social environment etc. might have some effect on the results of the study and though they might not have considered while analysing the result.
2. The educational and socio- economic back ground, which could have affected the ability of the subjects in answering the questionnaire were not taken into consideration in analysing the results. This was another limitation of the study.

V. Hypotheses

1. It was hypothesized that there might not be significant difference in relation to the level of occupational stress between the Male Physical Education Teachers working in Government Schools and Public Schools in Jammu and Kashmir U.T.
2. It was hypothesized that there might not be significant difference in relation to the level of occupational stress between the Female Physical Education Teachers working in Government Schools and Public Schools in Jammu and Kashmir U.T.
3. It was hypothesized that there might not be significant difference in relation to the level of occupational stress between the Male and Female Physical Education Teachers working in Government Schools in Jammu and Kashmir U.T.
4. It was hypothesized that there might not be significant difference in relation to the level of occupational stress between the Male and Female Physical Education Teachers working in Public Schools in Jammu and Kashmir U.T.

VI. Selection of Subjects

For the purpose of this study a total of 600 Physical Education Teachers (150 male & 150 female from Government schools and 150 male

& 150 female from Public schools) were selected as subjects and their age ranged from 25 to 40 years. In the present investigation, Government and Private schools was the field of study. As per the sample, 600 teachers of schools of Jammu and Kashmir U.T., were taken up on the basis of stratified random sampling techniques [2].

VII. Administration of Questionnaires

The subjects were consulted personally and their sincere cooperation was solicited. The research scholar himself visited the different Government and Public schools of Jammu and Kashmir U.T. and collected data on the selected variables of Male and Female school teachers from Government and public schools. The consent of the experts and willingness of the teachers were considered before the administration of questionnaire. Responders were called to a common place in group when they were not busy and had enough time to spare for testing. The questionnaires were distributed among all the subjects. Under the direct supervision of the investigator. A total 600 school teachers were selected for this survey study. These tests were administered one after the other separately, after a gap of 15– 20 minutes in between the tests. The subjects were asked to read each statement of the questionnaire carefully. The scoring was done for each variable according to the instructions given in the respective manual [4].

VIII. Discussion of Findings

The researcher examined the Occupational Stress and Social Adjustment Comparison among Physical Education Teachers working in Government and Public Schools of Jammu and Kashmir U.T. From the results of the study it is clear that the public school Female teachers as whole are found to be highly occupational stressed. This high level of occupational stress might be determined due to the stress-related health problems, lowered work productivity, inability to cope with work stress, job change consideration and heavy workload. Heavy

workload was also the most frequently cited reason for considering job stress during the job. Female teachers working in public schools were more likely to consider heavy workload as a result of occupational stress.

The findings of the present study also shows that there is significant difference found among female Physical Education Teachers working in Government and Public Schools in relation to the level of social adjustment. It is also clear from the present study that the female Physical Education Teachers working in Public Schools are more socially adjusted in comparison with the female Physical Education Teacher working in Government Schools. Adjustment is the balancing of internal needs and external demands on the organism. One is well adjusted if one has developed the capacity to maintain the harmony of one's inner and outer worlds. The differences in relation to the level of social adjustment are found between selected teachers might be due to their behaviour and it depends on maturation and learning. Maturation is helpful in the process of social and emotional adjustment. Psychological Research Studies have been indicated that the socialization also plays an important role in social maturation, social learning and social adjustment. Through socialization individuals prepare themselves for life in a society at a given time [4].

IX. Conclusion

On the basis of the findings of the study, the following conclusions are drawn:

1. From the results of the study, it is clear that the public school Female physical education teachers as a whole are found to be highly occupational stressed.
2. The findings of the present study also make clear that public school Female teachers as a whole are found to be highly socially adjusted.

3. The significant difference is found among Male Physical Education Teachers working in Government and Public Schools in relation to the level of occupational stress. It is also clear from the present study that the Male Physical Education Teachers working in Public Schools are more occupationally stressed in comparison with the Male Physical Education Teachers working in Government Schools.

4. The significant difference is found among Female physical Education Teachers working in Government and public schools of Jammu and Kashmir U.T. in relation to the occupational stress. It is also clear from this study that female physical education teachers working in Public schools are more occupationally stressed in comparison with the female physical education teachers working in government schools.

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Elderly Care in the 21st Century: A Critical Review of its Importance, Challenges, and Recommendations in India and Globally

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Abstract— The aging population is a global phenomenon, and India is no exception. With over 138 million elderly persons (aged 60 years and above) accounting for about 10% of the total population, India faces significant challenges in providing adequate elderly care. This review paper aims to highlight the importance of elderly care, the challenges faced in providing elderly care in India, and compare the elderly care system in India with other countries. The paper also provides recommendations for improving elderly care in India. The findings suggest that the challenges of elderly care in India are influenced by socio-cultural changes, economic dependency, inadequate healthcare infrastructure, and lack of specialized geriatric services. Although the government has implemented several schemes and programs for the welfare of the elderly population, there is still a significant gap in the availability and accessibility of comprehensive elderly care services in India. Compared to developed countries and some Asian countries like Japan, India lags behind in the provision of comprehensive elderly care services. To address these challenges, it is recommended to strengthen community-based services, improve access to healthcare services, and enhance the financial security of the elderly. Implementing these recommendations effectively will contribute to improving the quality of life of the elderly in India.

Index Terms— Elderly care, Quality of Life, India, Government Initiatives.

INTRODUCTION

The graying of the global population is an undeniable demographic shift that has gained attention in recent years. According to the United Nations, the number of

people aged 60 years or older is expected to more than double by 2050, from 962 million in 2017 to approximately 2.1 billion [37]. This demographic transformation is not confined to developed nations but is also a growing trend in developing countries, including India. As of 2021, India's elderly population (aged 60 and above) stood at approximately 139 million, making up around 10% of the total population [19]. Such significant numbers project a situation that merits immediate attention, as aging is associated with a complex set of health, social, and economic issues that directly impact the individual, their families, and society at large.

The concept of elderly care is multidimensional, encapsulating various aspects such as healthcare, social engagement, emotional well-being, and financial security. Elderly care is often conceptualized as a responsibility falling mainly within the purview of family members [3]. However, as societies evolve and family structures change, there is an increasing need for a collective approach involving various stakeholders, including government bodies, healthcare organizations, and social services. While the importance of elderly care is universally acknowledged, its relevance is even more accentuated in societies with significant intergenerational dependencies, such as India. Traditional social systems in India often rely on the elderly for wisdom and guidance, while the elderly depend on the younger generations for physical and emotional support [31]. Such interdependencies create a symbiotic relationship where

the well-being of the elderly directly correlates with the health and well-being of society.

Yet, it is alarming to note that elderly care is a vastly under-researched and under-prioritized domain in India and many other parts of the world [1]. Despite its intrinsic importance, the topic often fails to make it to mainstream policy agendas. Such negligence results not just in the marginalization of the elderly but also creates a series of challenges that compound over time, affecting society as a whole.

In India, the challenge is particularly acute. Rapid urbanization, modernization, and the dissolution of joint family structures are undermining the traditional systems of elderly care [32]. Younger generations, burdened by the demands of a fast-paced life, often find it challenging to provide the level of care, attention, and resources required for elderly family members [34]. The situation is exacerbated by a lack of awareness, inadequate healthcare infrastructure, and a dearth of specialized healthcare professionals trained in geriatric medicine [7]. However, the challenges are not confined to developing nations like India. Even in developed countries, with relatively better healthcare systems, the elderly population faces issues like loneliness, mental health problems, and ageism [6]. Furthermore, the COVID-19 pandemic has disproportionately affected the elderly, bringing the topic of elderly care to the forefront of global discussions [23]. Therefore; this paper aims to critically review the importance of elderly care in the 21st century, with a specific focus on India. We will explore the various facets of elderly care, discuss the challenges inherent in current systems, and draw comparisons with practices in other parts of the world. The objective is to delineate a roadmap for stakeholders, from policymakers to healthcare providers, that can guide efforts towards improving the quality and reach of elderly care services both in India and globally.

I. IMPORTANCE OF ELDERLY CARE

The importance of elderly care cannot be overstated. As individuals age, they often face a multitude of challenges that include physical decline, cognitive impairment, increased susceptibility to chronic diseases, and social isolation [40]. Providing adequate care to the elderly is not only a moral and ethical obligation but also has significant implications for societal well being and economic development.

- I. **Physical Health:** Older adults are more susceptible to chronic diseases such as hypertension, diabetes, and osteoporosis [29]. Additionally, the risk of falls and injuries increases with age, necessitating specialized care and attention [33]. Appropriate elderly care can help manage these health conditions, reduce the incidence of falls, and improve overall physical well-being.
- II. **Mental Health:** Mental health issues, including depression, anxiety, and dementia, are common among the elderly population [39]. Elderly care services that provide mental health support can play a crucial role in managing these conditions and enhancing the quality of life of older adults [17].
- III. **Social Well-being:** Social isolation and loneliness are significant concerns for the elderly, as they often lead to adverse health outcomes [21]. Elderly care services that facilitate social interactions and provide opportunities for engagement can help mitigate feelings of loneliness and improve social well-being [11].
- IV. **Economic Implications:** An aging population presents significant economic challenges, including increased healthcare expenditures and a smaller working-age population [8]. Investing in elderly care can help reduce healthcare costs by preventing and managing chronic diseases and minimizing hospitalizations [18].
- V. **Inter-generational Solidarity:** Older adults often play a crucial role in families by providing childcare, emotional support, and transmitting cultural values [5]. Providing adequate care to the elderly ensures that they can continue to contribute to their families and communities, thereby strengthening inter-generational bonds [25].

In essence, elderly care is of paramount importance for ensuring the physical, mental, and social well-being of older adults. It has significant implications for economic development and inter-generational solidarity. Investing in elderly care is not only a moral and ethical obligation but also a societal necessity.

II. CHALLENGES IN ELDERLY CARE

Providing adequate care for the elderly population presents numerous challenges, both in developed and developing countries. These challenges are multifaceted and encompass a range of issues including healthcare infrastructure, social support systems, financial resources, and cultural factors.

- I. **Healthcare Infrastructure:** There is a significant shortage of healthcare facilities and professionals specialized in geriatric medicine worldwide [41]. This gap is particularly acute in low and middle-income countries, where the healthcare infrastructure is often insufficient to meet the needs of the general population, let alone the specialized needs of the elderly [4].
- II. **Access to Healthcare:** Even when healthcare facilities are available, accessing them can be a significant challenge for the elderly, particularly those living in rural areas or with mobility limitations [22]. Additionally, the cost of healthcare services can be a significant barrier for older adults with limited financial resources [1].
- III. **Chronic Diseases and Comorbidities:** Older adults often suffer from multiple chronic diseases, which require complex and coordinated care [10]. Managing these co morbidities is a significant challenge, both from a medical and a logistical perspective.
- IV. **Mental Health:** Mental health issues, such as depression, anxiety, and dementia, are common among the elderly population but are often under diagnosed and undertreated [30]. The stigma associated with mental health issues can also be a significant barrier to seeking and receiving appropriate care [15].
- V. **Social Isolation:** Social isolation and loneliness are significant concerns for the elderly and can have adverse effects on their physical and mental health [21]. Providing adequate social support and opportunities for social interaction is a critical component of elderly care but is often overlooked.
- VI. **Financial Resources:** Many older adults have limited financial resources, which can make it difficult for them to afford the necessary

healthcare services, medications, and assistive devices [2]. Additionally, the cost of providing care for the elderly can be a significant burden on their families and on society as a whole [14].

- VII. **Cultural Factors:** Cultural factors can also pose challenges to providing adequate elderly care. For example, in some cultures, there may be a reluctance to seek help from outside the family or to place elderly family members in care facilities [13]. Additionally, cultural differences may impact the perception and management of certain health conditions.

Hence, the challenges in providing adequate care for the elderly are numerous and multifaceted. Addressing these challenges requires a coordinated and multidisciplinary approach that takes into account the specific needs and preferences of the elderly population.

III. ELDERLY CARE IN INDIA

India is home to a rapidly aging population. As of 2021, it is estimated that there are over 138 million elderly persons (aged 60 years and above) in India, accounting for about 10% of the total population [27]. This number is projected to increase to 323 million, or nearly 20% of the population, by 2050 (United Nations, 2019) [38]. The care of the elderly in India presents unique challenges that are influenced by a variety of factors including socio-cultural, economic, and healthcare infrastructure.

- I. **Socio-Cultural Factors:** Traditionally, elderly care in India has been a family responsibility, with older adults living with their children and receiving care and support from them [9]. However, with increasing urbanization and migration, nuclear families are becoming more common, and many older adults are left to live alone or with their spouses [35]. This shift has significant implications for the care and support of older adults.
- II. **Economic Factors:** A large proportion of the elderly population in India is economically dependent on their children or other family members [1]. Additionally, only a small percentage of the elderly population has a regular source of income or pension, and many older adults, particularly women, do not have any savings or assets [1].

- III. **Healthcare Infrastructure:** Although there have been significant improvements in healthcare infrastructure in India over the past few decades, there is still a significant gap in the availability and accessibility of healthcare services for the elderly [20]. Additionally, there is a lack of specialized geriatric services and healthcare professionals trained in geriatric medicine [4].
- IV. **Government Initiatives:** The Government of India has implemented several schemes and programs aimed at the welfare of the elderly population. These include the National Programme for Health Care for the Elderly (NPHCE), which aims to provide comprehensive healthcare services to the elderly at various levels of healthcare delivery, and the Integrated Programme for Older Persons (IPOP), which provides financial assistance to non-governmental organizations (NGOs) for the establishment and maintenance of old age homes and day care centers [26].

Thus, elderly care in India faces numerous challenges including socio-cultural changes, economic dependency, and inadequate healthcare infrastructure. Although the government has implemented several schemes and programs aimed at the welfare of the elderly population, there is still a significant gap in the availability and accessibility of comprehensive elderly care services in India.

IV. COMPARISON WITH OTHER COUNTRIES

Elderly care systems vary widely around the world, influenced by a variety of factors including cultural norms, economic resources, and government policies. This section will compare elderly care in India with that in other selected countries.

- I. **Developed Countries (e.g., United States, United Kingdom):** In many developed countries, there is a well-established system of elderly care that includes both home-based and institutional care services [14]. These countries have a higher percentage of elderly population living in care homes or receiving professional home care services compared to India [28]. Additionally, developed countries often have comprehensive social security and healthcare systems that

provide financial support and healthcare services to the elderly [28].

- II. **Developing Countries (e.g., Brazil, South Africa):** Similar to India, many developing countries face challenges in providing adequate elderly care due to limited financial resources, inadequate healthcare infrastructure, and a lack of specialized geriatric services [24]. However, there are also differences. For example, in Brazil, there is a higher percentage of elderly population living alone or with their spouses compared to India [12].
- III. **Asian Countries (e.g., China, Japan):** Japan has one of the oldest populations in the world and has developed a comprehensive system of elderly care that includes both home-based and institutional care services [36]. In contrast, China, like India, faces challenges in providing adequate elderly care due to rapid urbanization, migration of the younger population, and a lack of specialized geriatric services [16].

Hence, elderly care in India faces similar challenges to many other developing countries, including limited financial resources, inadequate healthcare infrastructure, and a lack of specialized geriatric services. However, there are also unique challenges related to the socio-cultural context and the rapid urbanization and migration patterns in India. Compared to developed countries and some other Asian countries like Japan, India lags behind in the provision of comprehensive elderly care services.

VI. RECOMMENDATIONS

The challenges of elderly care in India are multifaceted and require a comprehensive and integrated approach. One crucial recommendation is the strengthening of community-based services. These services, including day care centers, home-based care services, and support groups for the elderly, play a crucial role in providing care and support to the elderly, especially those living in rural areas. As the traditional joint family system in India, which provided natural support for the elderly, is disintegrating due to urbanization and migration, the importance of community-based services is increasing. Another key recommendation is improving access to healthcare services. This is a major challenge for the elderly in India, as there is a significant gap in the availability and accessibility of healthcare services for the

elderly. It is essential to increase the number of healthcare facilities, train healthcare professionals in geriatric medicine, and provide mobile healthcare services to improve access to healthcare services for the elderly. Additionally, there is a need to develop and implement comprehensive geriatric care programs that address the unique healthcare needs of the elderly.

Finally, it is recommended to enhance the financial security of the elderly. A large proportion of the elderly population in India is economically dependent on their children or other family members. There is a need to enhance the financial security of the elderly by promoting pension schemes, providing financial assistance to the needy elderly, and promoting financial literacy among the elderly.

Hence, to address the challenges of elderly care in India, it is essential to strengthen community-based services, improve access to healthcare services, and enhance the financial security of the elderly. These recommendations, if implemented effectively, can contribute to improving the quality of life of the elderly in India.

VII. CONCLUSION

The rapidly aging population in India presents significant challenges in terms of providing adequate care and support for the elderly. These challenges are influenced by various factors, including socio-cultural changes, economic dependency, inadequate healthcare infrastructure, and lack of specialized geriatric services. While the government has implemented several schemes and programs aimed at the welfare of the elderly population, there is still a significant gap in the availability and accessibility of comprehensive elderly care services in India. In comparison with other countries, India faces similar challenges to many developing countries, but also has unique challenges related to its socio-cultural context and rapid urbanization and migration patterns. Developed countries and some Asian countries like Japan have more comprehensive elderly care services, highlighting the need for India to enhance its efforts in this area. To address these challenges, it is recommended to strengthen community-based services, improve access to healthcare services, and enhance the financial security of the elderly. Implementing these recommendations effectively will contribute to improving the quality of life of the elderly in India. Hence, elderly care is a critical issue that requires urgent attention from all stakeholders, including the government, non-governmental organizations, healthcare providers, and the

community. A comprehensive and integrated approach is needed to address the multifaceted challenges of elderly care in India and ensure the well being of the elderly population.

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किन्नरों को राजनीतिक, प्रशासनिक और न्यायिक अधिकार का विश्लेषण और अध्ययन

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सारांश –

मानव होने की सार्थकता हमारी संवेदनशीलता में निहित है जब समाज का एक वर्ग हमारी संवेदनहीनता के चलते बदतर जीवन जीने को मजबूर हो तो यह हमारे मानव होने की सार्थकता पर प्रश्नचिन्ह खड़ा करता है यह कई कलात्मक प्रतिभा और गुणों में पूर्ण होने के बावजूद यदि किन्नर समुदाय अपने पहचान और विकास के लिए आज भी तरस रहा है तो इसमें सामाजिक स्वीकार्यता ना मिलने की अहम भूमिका है यह जन्म के साथ हम एक जैविक लैंगिक पहचान लेकर पैदा होते हैं यह जैविक पहचान हमारे जननांग के माध्यम से हमें नर या मादा प्रजाति से जोड़ती है, यह हमारी लैंगिक पहचान ही होती है कि हम यह जान पाते हैं कि हम आखिर है कौन नर या मादा या कोई और यह इन दोनों से इतर समाज में जिनका अस्तित्व है वे तीसरे जन वे तीसरे जन वे हैं जिन्हें हम पारंपरिक यौन पहचानों के तहत समेट नहीं पाते हैं यह इन तीसरे जनों का पारंपरिक यौन पहचान में फिट नहीं हो पाना ही उन्हें अजनबी बना देता है। सिर्फ अजनबी नहीं बल्कि अवांछित भी हमारे समाज में यह तीसरा लिंग है –किन्नर समुदाय का जिसे हमारे समाज में हिजड़ा, ट्रांसजेंडर, छक्का, थर्ड जेंडर इत्यादि नाम से भी जाना जाता है

शब्द संकेत–किन्नर, दण्ड प्रावधान, ट्रांसजेंडर, थर्ड जेंडर संरक्षण।

भूमिका –

हमारे समाज में किन्नर समुदाय का एक बड़ा हिस्सा हाशिए पर जीवन व्यतीत कर रहा है सामाजिक अस्वीकार्यता की वजह से रोजगार के सामान्य अवसर भी इनके हाथ से छीन जाते हैं। इनकी अशिक्षा भी अधिकारों की लड़ाई में इन्हें

अक्षम बनाती है। हालांकि वैश्विक परिदृश्य में इस तरह के लोगों के संगठित होने से तृतीय लिंग की स्थिति में बदलाव आया है। वह अपनी अस्मिता और अधिकारों को लेकर गंभीर हुए हैं, साथ ही पारंपरिक रूप से जो सांस्कृतिक घेरा बनाया गया है, उनके कामों को लेकर, जीविकोपार्जन के साधन को लेकर आज उनमें बदलाव आ रहा है और यह समुदाय शिक्षा और स्वरोजगार के क्षेत्र में अपनी उपस्थिति दर्ज करा रहा है 15 अप्रैल 2014 को सुप्रीम कोर्ट ने किन्नरों को थर्ड जेंडर के रूप में पहचान मिली। केंद्र सरकार तथा राज्य सरकारों को निर्देश दिया गया कि किन्नरों को अपना अलग आधार कार्ड पहचान पत्र, ड्राइविंग लाइसेंस, पासपोर्ट आदि बनाने का हक है। न्यायालय ने उन्हें सम्मान से जीने के लिए अधिकार दिए हैं यह साथ ही अपने जीवन जीने के बारे में निर्णय लेने का भी अधिकार दिया है यह संविधान के अनुच्छेद 14 में कानून के समक्ष समानता की बात कही गई है यह संविधान के अनुच्छेद 15 में किसी लिंग या सेक्स के आधार पर भेदभाव प्रतिबंधित है। अनुच्छेद 15 के अंतर्गत कानूनी रूप से लागू किए गए नियम और व्यक्तियों के बीच इन नियमों के पालन में अंतर होता है यह इसे विडंबना ही कहा जाएगा कि देश में यौन स्थिति के कारण सामाजिक एवं शैक्षिक रूप से पिछड़े तृतीय लिंग के पुनर्वास, उनके जीवन स्तर में सुधार, सामाजिक संरक्षण आदि के लिए

सरकारी स्तर पर कोई प्रयास नहीं किया गया है। अनुच्छेद 17 में छुआछूत का निषेध किया गया है। भारतीय नागरिक होने के बावजूद तृतीय लिंग समुदाय संविधान प्रदत्त अधिकारों से वंचित है। हमने उन्हें उपेक्षित और बहिष्कृत करके रखा है। उनके मानव अधिकार का उल्लंघन भी होता है। उनके साथ गलत होता है तो कोई सुनता नहीं कि उनके साथ गलत हुआ है। पहले तो साबित करने में, यही बताने में उनको कितनी तकलीफ होती है क्योंकि उनकी कोई सुन नहीं रहा। हम उनको इंसान के तौर पर कोई देख नहीं रहा। अगर हम आज भी उनकी जीवन शैली पर नजर डालें तो पाएंगे कि इनकी स्थिति में कोई खास बदलाव नहीं आया है, वह आज भी बहुतायत मात्रा में ट्रेनों और बाजारों में गाना बजा कर भीख मांगते नजर आ जाते हैं, और इसका सबसे बड़ा कारण समाज का उनके प्रति नजरिया है। समाज की मानसिकता अभी भी उनके प्रति रूढ़िवादी बनी हुई है।

शोध के उद्देश्य:-

- वंचित वर्ग की समस्याओं के बारे में जानना।
- वंचित वर्ग की तकलीफों से समाज को परिचित कराना।
- हाशिए पर खड़े लोगों के साथ हो रहे भेदभाव को दूर करने का प्रयास करना।

भारत में स्थिति –

अप्रैल 2014 में हमारे देश में स्थित सुप्रीम कोर्ट ने 15 अप्रैल 2014 में भारत की न्याय व्यवस्था में किन्नरो को तीसरा लिंग घोषित किया गया। भारत में ट्रांसजेंडर समुदाय का भारत और हमारे देश के इतिहास में हम जाते हैं, तो हिंदू राजाओं की पौराणिक कहानियों में इनका उल्लेख मिलता है। फैसला सुनाते समय न्यायमूर्ति के एस राधाकृष्णन ने कहा कि ट्रांसजेंडर समुदाय के सदस्य जिस दर्द से गुजरते हैं उसे हमारे समाज के लोग

नहीं समझते हैं, और उन्हें सम्मान और अपनापन नहीं दे पाते हैं। यहां तक कि उनके अपने भी उन्हें अपना नहीं पाते हैं।

हमारे समाज में किन्नरो को कई प्रकार की असमानता का सामना करना पड़ता है, इसमें ड्राइविंग लाइसेंस प्राप्त ना कर पाना और विभिन्न सामाजिक लाभ तक पहुंच से निश्चित होना शामिल है। आम समाज के लोग किन्नरो अपने साथ रखना पसंद नहीं करते हैं।

ट्रांसजेंडर अधिकार संरक्षण अधिनियम 2019 – ट्रांसजेंडर वे हैं, जो ना तो स्त्री हैं, और ना ही पुरुष। इनमें ट्रांस मैन, वीर माना, किन्नर और उभयलिंगी भी आते हैं। देश के सर्वोच्च न्यायालय ने आदेश दिया कि किन्नरो के पास यह अधिकार होगा कि वह अपने लिंग का निर्धारण कर सकें। हमारे समाज में ट्रांसजेंडर को हिंसा व असमानता का सामना करना पड़ता है। इसको रोकने के लिए सरकार कानून बनाना चाहती है। इस बिल में ट्रांसजेंडरो का मानक तय किया गया^[1]।

इसको रोकने के लिए सरकार नया अधिनियम बनाना चाहती है। पुराने अधिनियम के अनुसार किन्नर वह व्यक्ति है जो कि स्त्री और पुरुष दोनों की ही श्रेणी में नहीं आता है। वह स्त्री और पुरुष का मिश्रित रूप भी हो सकता है, या हो सकता है कि, स्त्री और पुरुष में से कोई न हो। इसके अलावा उसका लिंग जन्म के समय तय किए गए लिंग के समान ना हो उसमें परा-पुरुष और परा-स्त्री और इंटरसेक्स भिन्नता और लिंग विलक्षणता वाले व्यक्ति भी आते हैं^[2]।

नए अधिनियम के अनुसार थर्ड जेंडर में ट्रांस मैन, ट्रांस वूमेन, इंटरसेक्स या जेंडर कूरियर और सोशियो कल्चर आईडेंटिटी किन्नर और हिजड़े शामिल हैं। लेकिन थर्ड जेंडर के लोग चाहते हैं कि, जेंडर आईडेंटिटी का अधिकार उनका होना चाहिए^[3]।

इस बिल में सबसे बड़ी कमी यह है कि थर्ड जेंडर आईडेंटिटी के लिए सर्टिफिकेट लेना होगा। सर्टिफिकेट लेने के लिए जिला मजिस्ट्रेट को आवेदन देना होगा। आवेदन देने के बाद मेडिकल जांच करानी होगी इसके बाद फिटनेस सर्टिफिकेट जारी किया जाएगा इसमें एक रिवाइज सर्टिफिकेट का भी प्रावधान है। यह केवल तब होगा जब एक व्यक्ति जेंडर कर कंफर्म करवाने के लिए सर्जरी करवाता है। उसके बाद सर्टिफिकेट में सुधार किया जाएगा। समुदाय के अनुसार इस अधिनियम से उनके निजता के अधिकार समाप्त हो रहे हैं।

इस बिल का विरोध हुआ, इस समुदाय का मानना है कि उनको रिजर्वेशन के दायरे से बाहर रखा गया है यद्यपि सर्वोच्च न्यायालय ने नालसा केस के जजमेंट में ट्रांसजेंडर को ओबीसी का दर्जा देने की बात कही थी यद्यपि लेकिन इस नए अधिनियम में आरक्षण की व्यवस्था नहीं की गई यद्यपि इस संदर्भ में ग्रेस बानो का कहना है कि, इस अधिनियम में सरकार ने सर्वोच्च न्यायालय के फैसले को न मानते हुए किन्नरों को उनके अधिकारों से वंचित कर दिया यद्यपि यह उनके लिए काफी निराशाजनक है। इस बिल के द्वारा सरकार ने हासिए पर खड़े लोगों के साथ न्याय नहीं किया।

थर्ड जेंडर संरक्षण अधिकार अधिनियम बनने की प्रक्रिया—

15 अप्रैल 2014 को सर्वोच्च न्यायालय द्वारा पास किया गया। नालसा जजमेंट तीसरे समुदाय के लोगों की स्थिति में सुधार लाने के लिए एक ऐतिहासिक फैसला था, इस जजमेंट के बाद किन्नर समुदाय के लोगों को तीसरे जेंडर के तौर पर पहचान मिली। सर्वोच्च न्यायालय का यह जजमेंट किन्नरों को भारतीय संविधान में मूल अधिकार देता है। इसके पश्चात तिरुचि शिवा जो डीएमके पार्टी से राज्यसभा के सांसद हैं इन्होंने सदन में एक प्राइवेट मेंबर बिल पेश किया

थावरचंद गहलोत जो सामाजिक न्याय मंत्री हैं उन्होंने इस बिल का विरोध यह कहकर किया कि सरकार ने न्यायालय के फैसले के बाद पॉलिसी बना ली है। इसलिए शिव बिल वापस ले-ले, लेकिन शिव अपने बिल पर अड़े रहे यद्यपि आखिरकार अप्रैल 2015 में यह बिल राज्यसभा में पारित हो गया यद्यपि शिव ने पक्ष रखा की कागज पर ट्रांसजेंडर की संख्या 4:30 लाख है, परंतु वास्तव में ट्रांसजेंडरों की संख्या लगभग 20 लाख हो सकती है। इन्हें मतदान का अधिकार तो दिया गया परंतु असमानता से बचाने के लिए कोई कानून नहीं बनाए गए [4]।

सांसद बैजयंत पांडा ने इस बिल को अगस्त माह में प्राइवेट मेंबर बिल के रूप में लोकसभा में पेश किया। बैजयंत के बीजेपी में शामिल होते ही सरकार ने इस बिल को टेकओवर कर लिया तथा अपना ड्राफ्ट पेश करके कमेटी में इसे भेज दिया। 27 सुझाव सरकार को इस बिल पर कमेटी द्वारा दिए गए। इसके बाद ट्रांसजेंडर संरक्षण अधिकार अधिनियम 2016 में कुछ बदलाव किए गए जिसमें स्क्रीनिंग कमेटी को हटाना, भीख मांगने को अपराध की श्रेणी से बाहर करना शामिल है। इस बिल को लोकसभा में दिसंबर 2018 में पारित कर दिया गया यद्यपि लेकिन सत्र के समाप्त होने के बाद फिर से नए सत्र में इस बिल को नए नाम टी.जी. अधिकार संरक्षण बिल 2009 नाम देकर पेश किया गया और राज्यसभा में पास हो गया यद्यपि तत्पश्चात राष्ट्रपति के हस्ताक्षर के साथ ही यह बिल कानून बन गया।

अधिनियम के मुख्य बिंदु—

इस अधिनियम के अनुसार ट्रांसजेंडर वह व्यक्ति है, जिसका जेंडर निर्धारित जेंडर से मैच नहीं करता। इनमें ट्रांस मैन, ट्रांस वूमेन, इंटरसेक्स और सोशियो कल्चर आइडेंटिटी जैसे हिजड़ा और किन्नर से संबंध रखने वाले लोग भी शामिल हैं। इस बिल में ट्रांसजेंडरों के साथ होने वाले असामान्य व्यवहार पर पाबंदी लगाने का प्रावधान है।

बिल के मुताबिक आज भी ट्रांसजेंडरो के साथ कई क्षेत्रों में असामान्य व्यवहार किया जाता है

जैसे—

शिक्षा — सरकारीश्रेणिक संस्थानों में अथवा सरकार द्वारा मान्यता प्राप्त शिक्षण संस्थाओं में ट्रांसजेंडर के साथ किसी प्रकार का असमान व्यवहार नहीं किया जाएगाद्य ट्रांसजेंडरो को शिक्षण संस्थानों में शिक्षा ग्रहण करने का, खेलों में भाग लेने का पूरा अधिकार है।

नौकरी — किसी भी सरकारी या गैर सरकारी संस्थान नौकरी देने में ट्रांसजेंडर के साथ किसी प्रकार का असमान व्यवहार नहीं कर सकतीद्य हर संस्था में एक शिकापत पदाधिकारी होगा जो इस अधिनियम से जुड़ी हुई शिकायतों पर कार्रवाई करेगा। यह अधिकारी ट्रांसजेंडर के मानवाधिकारों की रक्षा हेतु होगा।

स्वास्थ्य देखभाल — ट्रांसजेंडर की स्वास्थ्य से जुड़े हुए सुविधा सरकार देगी। इसके अंतर्गत अलग से एच.आई.वी टेस्ट सेंटर खोलने, ट्रांसजेंडर को मेडिकल इंश्योरेंस स्कीम और सेक्स रियासासमैय सर्जरी का भी प्रावधान है।

निवास का अधिकार — हर ट्रांसजेंडर को अपने घर में अपने परिवार के साथ रहने का पूरा अधिकार है, एवं अगर उसकी केयर में उसका परिवार नाकाम होता है, तो वह किराए के घर में भी रह सकता है और रिहैबिलिटेशन सेंटर में भी रह सकता है। कोई भी व्यक्ति किसी भी ट्रांसजेंडर को उसके ट्रांसजेंडर होने के आधार पर उसे घर देने से इनकार नहीं कर सकता है, और कोई भी ट्रांसजेंडर व्यक्ति को खुद के नाम पर जमीन या कोई भी प्रॉपर्टी खरीदने का पूरा अधिकार दिया गया है।

‘ पब्लिक और प्राइवेट ऑफिस खोलने का अधिकार।

‘ ट्रांसजेंडर व्यक्ति हर सुविधाओं का लाभ उठा सकता है जो की एक आम इंसान को दी जाती है।

आंदोलन का अधिकार

इस कानून के तहत जबरदस्तीकिसी भी ट्रांसजेंडर व्यक्ति से काम नहीं करवाया जा सकता लेकिन किसी सरकारी स्कीम के तहत कोई ट्रांसजेंडर मजदूरी करता हैतो वह अपराध नहीं होगा। उसके ट्रांसजेंडर होने के कारण कोई भी व्यक्ति उसे उसके घर या गांव से नहीं निकल सकता और ना ही कोई व्यक्ति इस आधार पर उसे सार्वजनिक स्थलों को इस्तेमाल करने से रोक सकता है,इन्हें शारीरिक, मानसिक और आर्थिक तौर पर परेशान करना हिंसा की श्रेणी में आता है।

दंड का प्रावधान—

इस अधिनियम के तहत ट्रांसजेंडर इन अपराधों को करने वाले व्यक्ति को 6 माह से 2 वर्ष तक की सजा हो सकती है। अपराध के अनुसार ही दंड तय किया जाएगा। साथ ही जुर्माना भी लग सकता है। इस बिल में ट्रांसजेंडर के लिए एक काउंसिल नेशनल काउंसिल फार्म ट्रांसजेंडर पर्सन बनाने की बात भी कहीं गई है। जो केंद्र सरकार को सलाह देगाद्य केंद्रीय सामाजिक न्याय मंत्री इसके वॉइस चेयर प्रसन्न होंगे। इसके अलावा सोशल जस्टिस मंत्रालय के सचिव, हेल्थ, होम अफेयर्स, ह्यूमन रिसोर्स डेवलपमेंट मंत्रालयो से एक एक प्रतिनिधि शामिल होंगे। नीति आयोग और नेशनल ह्यूमन राइट्स कमीशन के भी मेंबर काउंसिल में होंगे। राज्यों के सरकारों के भी प्रतिनिधि इसमें होंगे। साथ ही ट्रांसजेंडर कम्युनिटी से 5 मेंबर और अलग-अलग एनजीओ से 5 एक्सपोर्ट होंगे।

निष्कर्ष —

आधुनिक विज्ञान ने तीसरी लिंग के व्यक्तियों को नया आयाम दिया “ लिंग परिवर्तन सर्जरी” अनेक तृतीय लिंग व्यक्ति इस सर्जरी को अपनी परम आशा की किरण के रूप में देखते हैं जिससे वह

शारीरिक रूप से उस लिंग जैसे हो जाएंगे जिससे वह मानसिक रूप से मेल खाते हैं। ऐसी एक सर्जरी की कीमत भारत में 2 लाख से 7 लाख के बीच है।

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