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# Countryside Tourism in Orissa: An Economic Growth Engine

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## **ABSTRACT**

In past few years, as tourism has grown in popularity throughout the globe, a greater emphasis has been placed on countryside tourism. Countryside tourism is now the centre of interest all across the globe and it is increasingly identified as a crucial driver of rural economic development. Tourism is the 2nd highest revenue-giving sector in the world, behind the oil industry. As a result, the nation must distinguish between various kinds of visitors in order to comprehend and analyze the purpose of their presence. As a result, rural tourism has a lot of promise and may generate a lot of money in the near future. The primary goal of this article is to investigate the advantages and drawbacks of rural tourism in Orissa. The nature of this work is descriptive. The comprehensive research approach was used to continue this study and to determine the goals. Research papers, accessible literary materials, scholarly publications, cases, and other published and unpublished resources on the subject were used to gather pertinent and supporting data. According to the research, rural tourism or eco-tourism, if professionally organized, promoted, and administered, may enhance the living conditions of the local people while also helping the protection of the natural environment. While tourism has evolved as a burgeoning sector in Orissa, the issue now is to maximize the benefits of the scenario by making the most use of the natural resources available.

#### Keywords

Business Planning, Countryside Tourism, Economic Growth, Employment Generation, Rural Tourism.

# 1. INTRODUCTION

Tourism is among the most important businesses on the globe. Tourism that can be maintained in the long run because it benefits the social, economic, ecological, and cultural surroundings of the region in which it occurs. It is therefore one of the main sources of revenue for developing nations like India. However, if tourism's massive infrastructure and resource needs (such as water consumption, trash production, and energy usage) are not effectively managed, it may have serious consequences for local people and the environment. The soul of India lives in its towns and villages, and those who live in cities and municipalities have origins in village life, which is full of pastoral beauty and poignant simplicity, fresh soothing breezes, and abundant openness. In a nation like India, in which nearly 74% of the population lives in rural regions, tourist future prospects may be used as an approach for rural growth in overall and countryside tourism in general. Approximately fifty million people are employed in the tourist industry. Even a ten percent increase in the tourist industry would result in the creation of 5 million jobs each year, with the weaker sectors of society, such as women and rural craftsmen, benefiting the most. Rural tourism is defined by its

conventional strategy to exhibiting regional arts, handicrafts, heritage, and way of life[1].

With tourism becoming more popular throughout the globe, an emphasis on rural tourism and eco-tourism has emerged in recent years. It is widely acknowledged that, if carefully structured, developed, and managed, rural tourism or ecotourism may enhance the living conditions of local residents while also contributing to the preservation of the natural environment. While tourism has evolved as a burgeoning business in India, the difficulty is to capitalize on the scenario by making the most use of the country's natural resources. What exactly is rural tourism? The administration has taken a wide perspective of the situation [2]. A Tourism Ministry policy paper defined countryside tourism as "any tourism activity that demonstrates country life, art, heritage, and tradition at remote towns, thus further profiting the surrounding residents socioeconomically and facilitating communication between locals and tourists for a much more rewarding and fulfilling tourism experience." Countryside tourism is a kind of tourism that actually occurs in the countryside. Farm or agricultural tourism, ethnic tourism, natural tourism, sports tourism, and eco-tourism are all examples of diverse tourism. Unlike traditional tourist, countryside tourism has a few distinct features: It is cantered on the conservation of heritage, culture, and customs; the places are much less crowded; it is mostly in natural settings; and it is focused on the protection of cultural heritage, history, and belief systems[3].

In India, countryside tourism is still in its infancy, but it is on the rise. There is a large market available. Many nations' experiences indicate that rural tourism may be seen as a viable source of income and employment. The major issues with countryside tourism, like any rural development initiative, are, of course, the same. Robust community level institutions, capable of carrying out the initiative once it has been started, would go a huge way toward increasing rural tourism [4]. Thus, at a time when there is a raging debate all across the globe about the need for sustainable long-term advancement and the formation of an eco-friendly and maintainable societal structure, it would be absolutely essential to provide allaround support and encouragement to eco-tourism and countryside tourism in such a manner that it might be accessed by both national and international travellers, thereby aiding the approach of rural growth. Countryside tourism, which encompasses eco-tourism and agricultural tourism, is being used by planners to improve socioeconomic possibilities for rural residents. Despite tourism industry has received considerable attention in the past decade; countryside tourism has never been a focus[5].

## 2. LITRATURE REVIEW

R. Batta attempted to examine the state of Himachal Pradesh's main environmental and ecological issues [6]. To examine the foundation for eco-tourism growth and the benefits of eco-

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tourism assets, to examine the market characteristics of ecotourism, and to present a general framework, concrete steps, and decisions, to examine the regional framework of ecotourism, and to select the appropriate steps to be followed and the sequence to encourage eco-tourism, to examine the localised structure of eco-tourism, as well as to propose an overall concept, concrete measures, and actions, to examine the regional framework of eco-tourism, and to propose an overall idea, tangible measures, and actions. On the sample of 100 persons used in the research, the Chi square test is used [7].

Kailash et al. attempted to evaluate views of cultural change at a number of tourist sites in Goa's South Goa region [8]. This research is entirely field-based, with 337 people completing a questionnaire in six seaside tourist locations wherein tourism is the primary objective. According to the findings, the majority of respondents believe that tourism has both good and negative effects. In addition, factor analysis identified four tourist industry factors: cultural development, negative impacts, economic growth, and risk to native customs.

P. Rupal examined the development of India's tourist sector throughout the planning period, as well as developing problems (such as alternative tourism) as a result of globalization [9]. It looks at the country's issues and challenges, as well as the hazards in tourist planning in India. The report also offers policy recommendations for overcoming the barriers in developing self sustaining tourism in the region.

In a region of Kashmir where seventy three percent of the population lives in rural regions, has emphasized the significance and opportunity of countryside tourism [10]. Kashmir does indeed have a plethora of options to offer visitors, including natural splendour, a kaleidoscope of customs, a diverse culture, and a range of sports and recreation opportunities. This research aims to demonstrate that, if properly managed and structured, rural tourism may help the people of Kashmir reclaim their growth and prosperity after recent catastrophes and crises. According to the research, rural tourism business is becoming more important, since it is regarded as a key driving factor behind rural tourism [11].

In West Bengal, India, an author investigated rural tourism. The aim of this research is to look into why international and local visitors come to this place for spiritual or leisure reasons [12]. Tourism has had a significant effect on the regional economy, way of life, and socio-cultural developments among the individuals living in and around this heritage site. According to a pilot study, rural tourism enhanced municipal amenities such as communication, sanitation, transportation, and people's overall quality of life in this area. The effect of India's National Tourist Policy 2002, as pushed by the Tourism ministry, Government of India, on this countryside tourist destination is examined in this research, in particular, in respect of financial development, job opportunities, lifestyle, and changes in local people's lifestyles [13]. The findings of this research show that rural tourism benefits the local industry, socio-cultural developments, and lifestyle of those who live near tourist attractions [14].

Singh et al. attempted to provide an update on India's rural tourism growth and development [15]. The number of tourists visiting India's countryside is increasing, and the government is promoting it as a development engine. Any rural tourist development plan, in our opinion, should concentrate on long-term growth and take into consideration the interests and requirements of local residents. This article highlights the importance of sustainable tourism by describing the socio-economic, cultural, and environmental consequences of existing forms of country tourist. The article begins by delving into the definitions of words like rural, rurality, and

countryside tourism. It focuses on the origins and development of rural tourism, rural tourism in India, the effects of rural tourism, and the necessity for long-term rural tourism.

Further a researcher investigated the importance of entrepreneurship in rural tourism and how it may help to Anegundi's long-term rural development [16]. By analyzing the current tourist entrepreneurial culture and environment in Anegundi, the research seeks to discover and analyze different barriers and difficulties for tourism entrepreneurial growth in the village. It also seeks to find practical and workable answers to problems and roadblocks in the implementation of rural tourism-based business development in Anegundi. The exploratory research method was used to conduct the study, which was based on substantial secondary data gathered from different books, newspapers, websites, articles, and other sources. The goal is to get more acquainted entrepreneurial problems and to obtain a better knowledge of tourist entrepreneurship. According to the findings, rural tourist entrepreneurship is a critical tool for rural development. In the hamlet of Anegundi, rural tourism has the potential to provide alternative economic possibilities for the rural population, resulting in rural empowerment [17–20].

Rao has discovered, evaluated, and highlighted the current and future trends in the hospitality and tourist industries [21]. International tourism planning, hotel development and operation, Europe and the Single Market, planning issues and techniques, service improvement, finance and performance, and management psychology are just a few of the main themes that will be needed to encourage the lodging and tourism industry. This kind of research may be useful in identifying both advancements and gaps in the industry, resulting in more effective, efficient, and responsible tourism research that can be used to assist practical activities[22].

Potukuchi investigated tourism's perspective and opinion, as well as its impact on different groups of people in Maredumilli and the surrounding regions [23]. The emerging need for stakeholder coordination for sustainable tourism growth is then identified in this study. The research finds that there is a requirement to improve the long-term viability of tourist effects, which would require coordinated efforts by stakeholders involved.

Shankar has attempted to investigate the extent of historical tourism in India and how it may contribute to the molding of our society [24]. In India, there is a lot of potential for historical tourism. The government should support private businesses that promote historic tourism in underserved regions. To promote historical tourism in such places, we must first comprehend the environment, demographics, socioculture, economic, and political context of any location in order to make it a desirable tourist destination. To create a tourism strategic marketing strategy, we must first identify the target customer's requirements and desires, as well as how to connect them with the infrastructure of our historical tourist destinations [25–29].

# 3. DISCUSSION

## 3.1. Countryside Tourism

Countryside tourism is basically defined as a kind of tourism that takes place in rural regions or towns and provides jobs and revenue to the local people while also supplying customers with customized vacation packages. Countryside tourism is based on lodging services that are supplemented by further facilities and services that depend on local social, cultural, and natural resources that are utilized in accordance with sustainable development principles.

It may seem easy to describe rural tourism as "tourism in the countryside," but this definition ignores the activity's

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complexity as well as the many forms and interpretations established in different nations. In a wider sense, countryside tourism refers to a variety of activities, services, and facilities offered by farmers and rural residents in order to attract visitors to their region and create more revenue for their companies. If this broader definition is acknowledged, countryside tourism includes not only farm tourism, that's what vast majority of people think of when they think of countryside tourism, but also special interest nature vacations, touring in country places, and lodging as well as events, festivals, gastronomy, outdoor recreation, the manufacture and distribution of handicraft items and agricultural goods, and so on. However, a clear global definition of rural tourism is difficult to come up with. It varies by nation and over time, but it offers many potential advantages, including increased employment, a broader financial base, repopulation, social betterment, and the revival of local crafts. Simultaneously, tourism does not solve all of the issues that exist in rural regions, but it does have a lot of good aspects. It's one of several options available to rural communities looking to boost production and revenue.

# 3.2. Driving Forces of Countryside Tourism

This is the modern era, often known as the urbanised era. The majority of individuals live in large cities, surrounded by the repetitive rush and bustle of urban lifestyle. The author studied a lot of papers and books published by various writers throughout this study and managed to come up with a broad overview of the main driving factors of countryside tourism.

- The city's sound pollution stress people out, and many desire to avoid to rural parts of the country wherein they may live a stress-free lifestyle and re-engage with a quieter, calmer manner of living that provides comfort and rejuvenation.
- A yearning to be in countryside for natural environment.
- Attractive advertising in various media, as well as the excitement and boredom engendered by frequent visits to conventional tourist sites, may all draw visitors to rural environments for some countryside local tourism.
- In addition, modern mobility and telecommunication infrastructure has made rural areas increasingly approachable.
- Rural locations have their own culture, aesthetic, and mode of living, all of which are extremely appealing to visitors.
- Rural regions are generally seen to be healthier, due to the availability of cleaner air and nourishment, as well as opportunities for outdoor leisure.
- A yearning for memorable experiences, such as conversing with locals, since genuineness is seen to be found in authentic national experiences and cultures.

## 3.3. Benefits of Countryside Tourism

Countryside tourism benefits not just the locals, but also visitors, the administration, and the environment. The researcher has compiled a list of many of the most significant advantages of countryside tourism:

- Because tourism is a small-scale sector, it cannot generate employment as the administration can, but it may assist in job retention. It helps to improve the flow of retail, commuting, hospitality, health treatment, agriculture, and fishing, among other things.
- It certainly provides opportunities for the local youngsters to participate in tourism-related activities.

- It employs locals in tourism-related industries like as lodging, restaurants, shopping, transportation, telecommunication, and historical interpretation.
- It aids in the conservation of rural heritage and culture because people are motivated to maintain their traditions and culture when they realize that their history and traditions are the basis of their wealth.
- It aids the growth of new companies. When the number of visitors rises, handicraft and local cuisine businesses become more popular.
- The environment has also benefited because, just like we
  do in our everyday lives when we anticipate guests, we
  clean as well as we could; locals strive to keep their town
  tidy for the travellers.
- Tourism generates revenue, which may be used in the upkeep of the area.

# 3.4. Challenges In Countryside Tourism

The need to protect the ecosystems and biodiversity, as well as the requirement for public education, appropriate knowledge for both visitors and locals, plus the urge to create a democratic movement that allows individuals and communities to engage in development of sustainable tourism, are the key difficulties. They should also concentrate on job training programs, handicraft development and marketing, and landscape and primary infrastructural improvements to enhance the peasant's standard of living by establishing a healthy environment. The collaborative system in rural tourism may be a powerful tool for bringing good change to rural communities. If local people have an equal interest and power in administration and development, they can monitor and regulate the detrimental effects of tourism according to their own community. There are a couple additional difficulties in addition to these, which are discussed below.

#### 3.4.1. Lack of Trained Manpower

People who have been trained in hospitality administration and hotel management do not want to work in rural regions, therefore it will have to rely on rural persons who must be educated to meet the requirements of visitors. Everybody wants excellent service at the appropriate moment to attract various types of tourists, whether it is environmental tourism, wellness tourism, or agricultural tourism. The government may establish short-term monthly courses to train people to carry out all of their responsibilities effectively.

#### 3.4.2. Legislation Problems

Because tourism is a kind of amusement, all licensed restaurants, lodges, and cottages pay a hefty fee to the authorities. However, since rural populations would be engaged in countryside tourism, a tax exemption must be provided.

# 3.4.3. Insufficient Financial Support

The government has just recently begun to promote rural tourism. The federal and state governments should promote rural tourism by giving financial assistance to get the initiative off the ground. It will generate jobs in rural regions and aid in the movement of funds from metropolitan to rural communities. It has the potential to deter people from migrating from rural to urban regions. The development of human resources, the enforcement of laws and regulations, the construction of infrastructural facilities, and land-use strategic planning all need sufficient financial assistance.

## 3.4.4. Illiterate Population

Because the vast majority of rural residents are uneducated or illiterate, they are constrained by traditional beliefs and traditions. Their views and behaviours are heavily influenced by their culture, religion, and superstition. They have a laid-back lifestyle and prefer to cling to their conventional professions, whether remunerative or not, and are not willing to take risks. However, the local economies have been impacted by the increasing dynamism as a result of globalization, and the media is performing an essential role in altering the rural consumer's mentality. They were exposed to a variety of goods and services via television. They are subjected to a multitude of technologies offered by the government and non-government organizations. Rural folks must comprehend urbanites in order to promote countryside tourism

# 3.4.5. Lack of Local Involvement

Because of their lack of education and skills, rural residents may be forced to work as unskilled labourers. The fundamental idea underlying countryside tourism is to promote rural people's involvement. Local residents, on the other hand, are rarely engaged in policy formulation, planning, or implementation. Outside investors that want to capture the majority of the economic advantages from rural regions mislead the majority of rural people who have little understanding of tourism. As a result, locals are unsure regarding the sort of tourism they wish to develop in their own community.

#### 3.4.6. Lack of Communication Skills

The fundamental barrier to communication is language and education. It is critical to be able to communicate properly. Much of your success will be determined by your ability to greet visitors with warmth. If a visitor develops a desire in learning further after visiting a historical monument or structure, and there is nobody to respond to their inquiries, it will have negative consequences. Tourists' desires and requirements will have to be understood by the villagers. Between the visitor and the host, there must be no communication breakdown.

### 3.4.7. Language Hindrance

In India, there are sixteen recognised languages and more than eight hundred dialects. Despite the fact that Hindi is the official language of the country, many citizens do not comprehend it. Either the rural inhabitants must improve their communication skills in order to interact with visitors, or they will not reap the benefits of countryside tourism. In addition, locals will need to know Hindi in order to speak with Indian clients and English in order to connect with international consumers.

# 3.4.8. Lack of Proper Physical Infrastructures

Roughly half of the nation's communities do not even have all-weather roadways. It's tough enough to travel to most of these communities. The scenery of north-eastern regions like Assam is stunning, but excessive rainfall makes it difficult to promote tourism, particularly during the rainy season. Not only are all-weather highways, but also clean potable water, power, telephones, security and safety, and other amenities are required to promote tourism in remote regions.

# 3.4.9. Lack of Basic Education

According to the 2011 Census report, rural India's literacy rate is approximately seventy percent, up from fifty-nine percent in 2001 and forty-four percent in 1991. The village literacy rate has consistently been below the national average for the last seven decades. Whereas the metropolitan literacy rate is

nearly eighty-five percent and the overall literacy rate is seventy-four percent, the countryside literacy rate is far below the national average, as per 2011 census. As a result, an absence of adequate schooling in rural regions is a significant impediment to countryside tourism.

# 3.4.10. Business Planning Skills

To establish and run any company, technical knowledge and ability are needed. A business plan may be developed with the assistance of a government or non-government entity. However, villagers should be involved in the development and implementation of the countryside tourism project; otherwise, it will be of little use to the rural population. In order to raise awareness and attract consumers, advertising and marketing advertising will be critical. Print media, pamphlets, public relations, and other methods may also be used to market it.

## 4. CONCLUSION

Tourism in the countryside may be used as a method for rural development. For a nation like India, where nearly 74% of the community lives in approximately seven million villages, building a solid foundation around the idea of rural tourism is unquestionably beneficial. Throughout the industrialisation and growth patterns have emphasized a focus on cities. The pressures of urban living have also resulted in a counter-urbanisation syndrome. As a result, there is a rising interest in rural regions. Conversely, the increasing tendency of urbanization has resulted in lower income levels, fewer employment prospects, and the abandonment of communities. Tourism in the countryside may be a solution. Along with this, the significance of rural tourism is rising due to increased awareness, greater interest in history and culture, better accessibility, and environmental concern. This has led to the current kind of tourism in industrialized nations, with visitors visiting rural locations to see and enjoy a calm and healthy

As a result, important geographic areas for the development of countryside tourism will be identified in order to promote village tourism as a main tourist product and to extend tourism's socio-economic advantages to rural and emerging geographical areas. Apart from financial support, the emphasis will be on using resources available via the Ministry of Rural Development, State Governments, and other Government of India Ministries and Departments. Despite the aforementioned efforts, the lack of appropriate facilities, accessibility to tourist sites, lodging, and an adequate number of trained personnel are the main obstacles in the growth of tourism in Orissa. Furthermore, a bad visitor experience is a barrier to the tourism sector's development, which is caused by insufficient infrastructure, poor sanitary conditions, and instances of touting and harassing of visitors in certain areas. If the tourism sector is supported, Orissa may become a successful tourist destination. From an economic and environmental standpoint, the state legislature should emphasize the significance of developing and enriching tourism.

# **REFERENCES**

- [1] Das DK. Planning and Management of Regional Infrastructure for Tourism Development in Orissa State, India. 30th Int Conf Syst Dyn Soc. 2012;
- [2] Wani IA, Sheikh IM, Maqbool T, Kumar V. Experimental investigation on using plastic wastes to enhance several engineering properties of soil through stabilization. In: Materials Today: Proceedings. 2021.
- [3] Mohapatra PC. Strategic Development of Wetlands: An Eco-Tourism Perspective. ICFAI J Bus Strateg. 2008;
- [4] Sharma U, Sheikh IM. Investigating self-compactingconcrete reinforced with steel & coir fiber. In: Materials

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- Today: Proceedings. 2021.
- [5] Panigrahi N. Development of eco-tourism in tribal regions of Orissa: Potential and recommendations. CEWCES Res Pap. 2005;
- [6] Batta RN. Evaluating Ecotourism in Mountain Areas: A Study of Three Himalayan Destinations. Int Rev Environ Strateg. 2006;
- [7] Wani IA, ul Rehman Kumar R. Experimental investigation on using sheep wool as fiber reinforcement in concrete giving increment in overall strength. In: Materials Today: Proceedings. 2021.
- [8] Gokhale K, Sawant DN, Ugavekar N. Goa: Tourism and Socio-Cultural Implications A Study Of Selected Tourist Destination of South Goa District, Goa-India. IOSR J Humanit Soc Sci. 2014;
- [9] Patel R. INDIA 'S TOURISM INDUSTRY PROGRESS AND EMERGING ISSUES. INDIA 'S Tour Ind – Prog Emerg ISSUES. 2012;
- [10] Ramjit M. Sustainable regional development through rural tourism in Jammu and Kashmir. African Journal of Hospitality, Tourism and Leisure. 2015.
- [11] Pathak D, Pratap Singh R, Gaur S, Balu V. To study the influence of process parameters on weld bead geometry in shielded metal arc welding. In: Materials Today: Proceedings. 2021.
- [12] Rathore N. Rural tourism impact, challenges and opportunities. ZENITH Int J Bus Econ Manag Res. 2012;
- [13] Sanyal A. Tourism Management.
- [14] Stojkovikj S, Oklevski S, Prakash Jasuja O, Najdoski M. Corrigendum to "Visualization of latent fingermarks on thermal paper: A new method based on nitrogen dioxide treatment" (Forensic Chemistry (2020) 17, (S2468170919300931), (10.1016/j.forc.2019.100196))>. Forensic Chemistry, 2020.
- [15] Singh J, Narban JS. Rural Tourism in India-A Model of Rural Culture & Heritage. Int J Adv Res Innov Ideas Educ. 2015;
- [16] RURAL TOURISM ENTREPRENEURSHIP.
- [17] Khatri M, Kumar A. Stability Inspection of Isolated Hydro Power Plant with Cuttlefish Algorithm. In: 2020 International Conference on Decision Aid Sciences and Application, DASA 2020. 2020.
- [18] Sharma K, Goswami L. RFID based Smart Railway Pantograph Control in a Different Phase of Power Line. In: Proceedings of the 2nd International Conference on Inventive Research in Computing Applications, ICIRCA 2020. 2020.
- [19] Goswami L, Kaushik MK, Sikka R, Anand V, Prasad Sharma K, Singh Solanki M. IOT Based Fault Detection of Underground Cables through Node MCU Module. In: 2020 International Conference on Computer Science, Engineering and Applications, ICCSEA 2020. 2020.
- [20] Solanki MS, Sharma DKP, Goswami L, Sikka R, Anand V. Automatic Identification of Temples in Digital Images through Scale Invariant Feature Transform. In: 2020 International Conference on Computer Science, Engineering and Applications, ICCSEA 2020. 2020.
- [21] Rao RS. EMERGING TRENDS IN HOSPITALITY AND TOURISM. Int J Res -GRANTHAALAYAH. 2014:
- [22] Stojkovikj S, Oklevski S, Jasuja OP, Najdoski M. Visualization of latent fingermarks on thermal paper: A new method based on nitrogen dioxide treatment. Forensic Chem. 2020;
- [23] Thryambakam P. Impact of Tourism on Community

- Development and Sustainability in Maredumilli, East Godavari District of Andhra Pradesh-A Case STUDY. Glob J Manag Bus Stud. 2013;
- [24] Shankar S. Impact of Heritage Tourism in India A Case Study. Int J Innov Res Inf Secur. 2015;
- [25] Parashar S, Chawla VK. A systematic review on sustainable green fibre reinforced composite and their analytical models. In: Materials Today: Proceedings. 2020.
- [26] Pathak D, Singh RP, Gaur S, Balu V. Influence of input process parameters on weld bead width of shielded metal arc welded joints for AISI 1010 plates. In: Materials Today: Proceedings. 2020.
- [27] Pathak D, Singh RP, Gaur S, Balu V. Influence of groove angle on hardness and reinforcement height of shielded metal arc welded joints for low carbon AISI 1016 steel plates. In: Materials Today: Proceedings. 2020.
- [28] Pathak D, Singh RP, Gaur S, Balu V. Experimental investigation of effects of welding current and electrode angle on tensile strength of shielded metal arc welded low carbon steel plates. In: Materials Today: Proceedings. 2019.
- [29] Ghai W, Kumar S, Athavale VA. Using gaussian mixtures on triphone acoustic modelling-based punjabi continuous speech recognition. In: Advances in Intelligent Systems and Computing. 2021.