

Study the Effect of Road Environmental Landscape on Tourism Attraction

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Abstract - Transportation systems play a major role in tourism industry and its development. So tourism cannot be discussed without transportation. To understand the complexity and relationship which exist between tourism and transport, you need to build a framework which can synthesize the different factors and processes affecting the organization, operation and management of activities, associated with tourist. The objective for such a framework would be to understand how tourists interact with transport and what factors and processes are involved in such interaction. A tourist always thinks of safe, comfortable and attractive mode of transport. Road transport is most popular and easily accessed transportation system for short and medium distances. In road transport system, tourists spend a major part of their time within transport vehicles, therefore the environment and roadside scenes should be attractive to them. It is widely acknowledged that landscape features can play a major role in determining the tourist destination choice. Roads are not only infrastructures which take us to landscapes; they also provide positive scenic routes through landscapes as well as enjoying landscape values. This paper focuses on the positive effects of roads environmental landscape and combination of them with man-made structures to provide a unique sense of place to attract tourism.

Key Words: Tourism, attraction, Environmental landscape, Road, Transportation.

1.INTRODUCTION

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For decades tourism industry growth has been a major contributor to increased economic activity throughout the world. It has created jobs in both large and small communities and is a major industry in many places. It is the dominant economic activity in some communities.

The impacts of tourism can be sorted into seven general categories: economic, environmental, social and cultural and taxes.

Tourism can enhance local people's life quality. For instance, it can serve as an important source of tax profits for local jurisdictions. Tourism can also support local culture in rural areas by encouraging restoration of local and regional historic sites. And tourism, which is generally considered to be a relatively clean industry, may foster local conservation efforts (1).

The inextricable relationship between transport and tourism is of fundamental importance in explaining the tourism system (2). The pattern of travel which exists between generating markets and receiving destinations has been the focus of past research activity, explaining, for example, the role of transport technology in the economic and spatial evolution of tourism destinations (3).

Page and Lumsdon (2004) contend that the transportation system of a tourist destination has an impact on the tourism experience which explains how people travel and why they choose different forms of holiday, destination, and transport(4).

Advances in transportation have widely eased travel. It is attributed to the ease and accessibility of modern transport that has spurred the widespread growth of nature tourism within the United States and overseas (5).

Road, air and rail transport, are the three major modes of transportation systems in the world. Road transport is one of the most promising and potent means suitable for short and medium distances. It offers a number of advantages such as flexibility, reliability and speed, besides supplementing and increasing the efficiency of the other modes of transport. It provides the basic infrastructure to travel for people who are living in different places.

The impact of automobiles in tourism can be observed in the increasing number of daytrips and leisure travel. Most trips

to the countryside are common and most of them utilize automobiles, which can take their toll on the resources.

People travel for pleasure, looking for tourist resources, facilities and events that provide them with entertainment and interest. These resources, facilities or events that attract tourists, can either be natural or man-made. Attractions are the main pull factor of tourist flow. Without these attractions, there would be no need for other tourist services. Attraction is a pull factor which entices travelers to a destination. However, the attractiveness of a destination will be different for different people, and it may change with time. Therefore, a combination of attractions may help to create a strong tourist appeal.

In road transportation, tourists spend a major part of their time within transport vehicles and the road environment is mostly perceived through the windows of vehicles. By passing a road near or within pristine or exotic area, people can visit and enjoy them when travelling without spending additional time.

So the changing forms, colors and patterns of roadside elements are the most common and significant visual stimuli for tourists. These landscapes and environmental scenes have significant effect on tourism attraction. Environmental design choices should take into account the character of nature, soil conditions and local landscapes when making provisions for road construction.

According to the above, this paper describes the effect of environmental landscape and roadside scenes and their quality on tourism attraction. These include the effect of road and their related elements, like bridges, walls, tunnels and etc. in creation beautiful landscape.

2. Considering roads participate in landscape view

Long distance travel takes tourists and visitors from different cultures and environments to places where they experience landscape and other local values. In addition, transport experience in routine life involves quite a varied range of landscapes through routine transport systems in conurbation areas as well as in rural regions(6).

As part of the transport infrastructure, roads play an important role in the maintenance and appreciation of the quality of the landscape. Roads offer a good, safe and rapid access to distant places, i.e., they permit access to communities and environments different to our own, and at the same time, to their landscapes. They allow us to move through the territory and give us access to landscape which we can appreciate. Road journeys are valuable scenic routes in which we can enjoy landscape values. Furthermore, each road has its own distinctive scenic character which gives it a special heritage quality.

The linear nature of roads is an essential feature of the relationship they have with the value of the landscape.

Good accessibility to landscapes gives freedom of choice, which, coupled with availability of information, can result in a deeper landscape experience and knowledge (6).

Road itineraries have values of their own, since they have developed as part of landscape dynamics and, as such, reflect cultural and natural aspects involved in those processes. Historic routes, geographical barriers, retaining walls, squares and environmental diversity can be appreciated along road itineraries.

Roads can be considered windows on the landscape. They take observers across landscapes which are viewed from the road. Furthermore, the view from the road makes a fair first approach to landscape which can be experienced later in a wider and deeper sense, once the car is parked (6).

Moreover, the integration of a road into the scenic landscape and the aesthetics results of this integration are important for maintaining values such as the effect of the composition or character of the landscape. The successful culmination of all these landscape qualities of the road can be based on the planning, management and construction processes, since, to their linear character, they are infrastructures which are very flexible in terms of their conception and design and can become part of the landscape in a way which is desired without too much effort in their planning and project.

3. Improving roads infrastructure design for landscape integration

At the beginning of the 20th century, scenic qualities of roads were applied to road design. Thus, scenic roads, parkways and roadside landscape were planned and built for enjoyment. These roads supposed landscape watching as a main project goal. Their itineraries and also their alignments were designed to serve excellent views and panoramas much like pedestrian paths within landscape gardens. Yet side road landscapes were also specifically designed to be viewed from the road.

Environmental concern, tourist Interests and a general demand for infrastructures of a better quality have favored this approach to roads as visual itineraries. Road maps generally include landscape itineraries within road networks while scenic viewpoints are often signaled along main routes.

landscape viewing from vehicles in movement is a very complex perception process which is often dealt with in a simplified way. A very varied group of aspects must be carefully taken into account if landscape viewing is to be promoted. Improving traveller's and traffic's safety through road self-explaning and improving road's infrastructure design in order to achieve a road and environmental integratin are the main aspects in this section.

3,1 Legibility and road self-explaining

Panoramas and sights, scenic view points and landmarks are the main resources of landscape and can be positively promoted by means of scenic roads. Since landmarks provide recognition keys to travelers who are to benefit from landscape viewing, plays a major role in landscape perception. Often, the availability of landmarks can become a good enough reason to prefer a visual itinerary rather than other views on landscape scenes with lack of recognizable features.

Therefore, factors related to scenic properties of roads are very important. In the first place, roads are three-dimensional scenes of the landscape so that road itineraries provide a series of sights. Fast succession of views gives road travelers a sense of landscape continuity and depth. Therefore, moving views from the vehicle become more perceptible and more delightful.

Legibility and road self-explaining is a feature of roads by which drivers can foresee the road alignment ahead, so they can adapt their vehicle movement and speed to the approaching stretch of road. The idea that a driver will see that a road is explaining itself to them, and will therefore adapt their behavior accordingly seems at first sight to be both simplistic and implausible.

Roads which enjoy good legibility show their alignment to drivers clearly along several hundreds of meters while bad legibility is typical of curved roads whose next stretch is hidden behind a bend or the top of a hill. Good legibility in roads is always desired for safety, especially in those roads which are designed for high-speed traffic where long stretches must be visible to drivers. (7)

To achieve these desirable circumstances, road architecture design and its environment must be managed and take care, if changing the roads shapes and structures is not proper, using road marking must be considered. Picture 1 can help to understand this issue.



Fig-1: Road alignment leads the direction of sight to the landscape providing a fast succession of views

3,2 Integrating road and its environment

Road design is aimed mainly to satisfying traffic capacity, driving safety and comfort. Road elements, aspect and environment tend to be seen as merely functional, that is conceived and devised to serve traffic. Therefore, pavements, traffic signs, road marks and safety barriers create a special environment which lacks character and identity (6).

Furthermore, high intensity traffic flows, including large numbers of heavy vehicles, make the road environment noisy, polluted and dangerous. Consequently, road structures such as platforms, lanes and side areas are often hard, aggressive and ungraceful. Thus, a road's own landscape is mostly aggressive and poor, lacking landscape features, a sense of identity and character. To improve landscape profile of roads, some road element and their materials can be modified to pleasant and desirable features that are in accordance with road's environment.

Landscape profile of roads can be improved in two different ways. Firstly, some road design features can use landscape character as a basic reference. Secondly, additional side elements can achieve for a closer appreciation and experience of landscape rather than that obtained from within moving vehicles (6). This method will be discussed at the rest parts of the article.

4.Modifying road's design elements

Some of the most important subjects that can make the roads and their related elements as tourism attractions categorized as follow: considering natural environment in road design, such as designing roads near forest zones, or rivers and ..., participating landscapes views in road designs, landscaping and vegetation installing design for roads environment, considering urban furniture, and etc. Tourist's travels from roads with these circumstances and their possible stops for watching the views, cause some changes in travel pattern in these roads, like vehicles speed and drivers tiredness decrement, passengers safety and travel demand increment.

Elements of road design such as road marks, traffic signs, pavement, hard shoulder etc, arise from the need for traffic safety. These have rigid designs since they must satisfy strict safety standards. However, other road elements enjoy different degrees of design freedom. Safety barriers, embankments and cuttings, retaining walls, gardening elements and information sign posts are among the latter. Furthermore, some special road structure elements such as roundabouts, bridges, parking places, petrol stations, service and resting areas are specific areas where road character can be developed positively (6).

Some roads elements, which shows the roads integration with the environment explained in the following section.

4,1 Road's barriers

Roads can include non-conventional design elements such as safety barriers, parapets, prevention posts and others which can give a specific sense of identity to road environs.

Safety barriers can be made in different colors and styles with various materials, for instance using wooden safety barriers or traditional parapets in mountain.

Cultural heritage, landscape and ecological issues can all influence choice of materials and methods used in parapet construction.

Roads prepare a natural view for the passengers. This modification in road's texture, provides a sense of naturalness and make these roads more pleasant for travel, (Fig. 2).



Fig.2. Traditional parapet

4,2 Retaining walls

Supporting structures, such as retaining walls for embankments or cuttings, are usually made with rigid and aggressive material which has no harmony with its natural environment.

Cuttings in unstable terrains and embankment in inclined lands require supporting elements at the slope base. These structures are often constructed with concrete walls, standard plaque walls, or piled with heavy rocks. Although they guarantee stability, all of them disturb road's coordination with its natural environment and present a very poor view.

It can be used traditional retaining walls, depending on the color and texture they will tend to blend or contrast with the background. In most cases the designer of road should pick colors that blend with the natural surroundings.

Traditional stone walling is a common solution. Local traditional stone walls can be easily integrated into road

structures, thus providing a sense of local character. Local stone walls easily integrate into road environment, and provide a natural and scenic view. Other solution is hiding these walls behind the trees that road's natural view can be preserved. The following picture shows a road whose embankment is supported by a precast concrete slab wall partially hidden behind a tree on the right side of the picture.



Fig.3. Precast concrete slab wall partially hidden behind a tree

4,3 Tunnels

Tunnel entrances have a special effect in roads landscape views. By modifying their construction materials to more coordinate materials with their surrounding areas the harmony of roads and their environment can be provided. In some cases tunnels have to deal with rock collapses of the slope above their entrance, so they usually include special solutions for the slope surface, or protective structures in different shape and size, that the outer part of all of them can be changed and modified by coordinate materials to prepare a scenic view for road's users, (see Fig. 4).



Fig.4. Structure covered by stone wall on the island of La Palma (Spain)

4,4 Parking areas

Parking areas must be safe to access and its location must be discreet. To make such a safe and separated place, that has adequate compatibility with road's environment, using trees and vegetation can be a helpful method. Also in bus stop design, utilization of suitable materials with roads landscape views like wooden materials can be useful in saving road's natural environment such as Fig 5 .



Fig.5. Parking area and bus stop suitable design with roads environment.

4,5 Squares

Squares with their landscapes, beautiful fountains, historical structures and buildings inside them, and their monuments are one of the most popular symbols of the cities that show cultural and historical events of that city. Popular squares like Azadi square in Tehran (Iran), or Clearwater Square in Florida (USA) can be regarded as tourism attraction of these cities. (Fig 6)



(a)Azadi Square Tehran (Iran)



(b) Clearwater, Florida

Fig.6. Squares around the world

4,6 Side areas

Some roads include side areas which are specifically designed for people's enjoyment of landscape, such as footpath, bicycle lanes, scenic viewpoints and parking areas. These areas require a special design because they have to combine people's landscape enjoyment with roads traffic functions.

Footpaths and bicycle lanes side areas must be safe and convenient. To using footpath and bicycle lanes beside the road traffic, they must be separated from the road and they are better suited to low traffic paths (Fig 7). Scenic viewpoints require a very specific location and may not always found in suitable places. To provide safe access to these places there has to be at least enough space for vehicle parking, standing areas or benches and other convenient requirements.



Fig.7. Separate bicycle lane, Safety barrier and low parapet separate pedestrians from traffic.

Golden Gate Bridge: San Francisco, United States

5. Impact of Bridges on tourism development

Sometimes, a road structural element, like a bridge with an especial design besides its traffic performance, can be regarded as an attraction spot for tourism. Bridges with their special beauty and pomposity have become symbols of cities. Some of them popularity have made them an exclusive element in tourism attraction.

Bridges such as pole Khajoo and Si-o-se Pol in Isfahan, Iran have such an attraction that has become one of the city tourism's attraction that competes with other attractions of the city and sometimes like Veresk bridge impresses on tourists to change their path toward itself.

Thousands of tourists have crowded onto and around San Francisco's Golden Gate Bridge to celebrate the iconic structure's 75th birthday. Crowds partied across its three-kilometer length, boats cruised on the water below and a finale of fireworks lit up the San Franciscan sky. Some of the famous bridges around the world are illustrated in Fig 8.



Golden Gate Bridge: San Francisco , United States



Si-o-se Pol Bridge (Isfahan,Iran)



Veresk Bridge (Savadkuh,Iran)

Fig.8. Famous bridges around the world as tourist attractions

To understand the relation between appeal of bridges and tourist attraction, Statistical investigation was performed on the number of visitors of two world-famous cities; San Francisco and London. The results were presented in Tables 1 &2 and chart 1&2. It shows that, in a particular year, the numbers of visitors of the San Francisco's Golden Gate Bridge and the London's Tower Bridge have significant amount in compared with total numbers of the city visitors(8, 9).

Table-1: San Francisco's Visitors statistics Data

Total visitors to San Francisco	Total visitors to Golden Gate National Recreation Area	Total visitors to Alcatraz	Total visitors to Victorian Houses
15,920,000	14,200,100	1,354,714	14,000

Table-2: London's Visitors statistics Data

Total visitors to London	Total visitors to Tower of London	Total visitors to St Paul's Cathedral	Total visitors to Tower Bridge	Total visitors to Museum of London	Total visitors to HMS Belfast
3,655,663	1,931,093	729,393	350,000	395,747	249,430

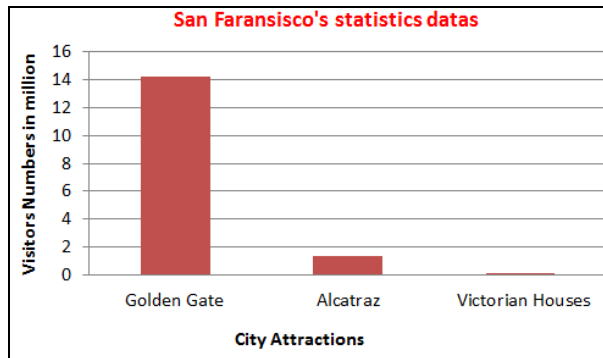


Chart-1: San Francisco's Statistics Data

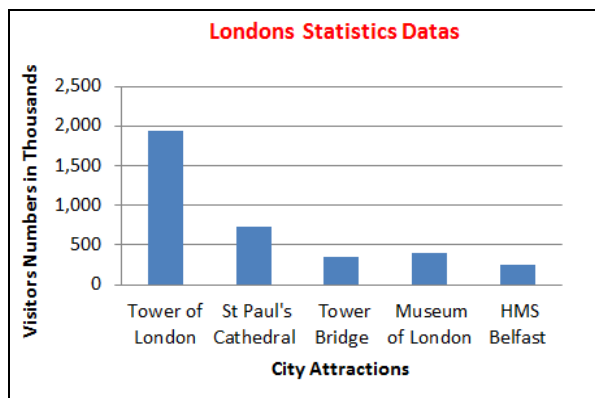


Chart-2: London's Statistics Data

6. CONCLUSIONS

Tourism plays an important role in socioeconomic and cultural developments of a country. The relationship between transport and tourism is undeniable so that the development of tourism industry is largely due to the improvement of transportation.

Road transport is most popular and easily accessed transportation system for tourism. To provide pleasant moments during traveling for tourism, it is necessary to create attractive environmental landscape and special elements in road system. Roads participate in landscape scenery, being present as a specific element which can be perceived and appreciated.

In this study the effects of road environmental scenic views and landscapes on tourism attraction has been investigated

and practical methods to increase tourist attractions along the roads were presented.

It also attempted to show the effect of changing the aggressive and poor landscapes of roads to a beautiful and attraction scenery for visitors and tourists by modifying road structures and its related elements such as barriers, side areas, retaining wall, parking area, tunnels and squares.

In addition, according this study, the impact of structural symbols like bridges on tourism attraction is very important and can competes with other attractions of the city and sometimes impresses on tourists to change their path toward itself.

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