CHAPTER 2

A LITERATURE REVIEW: IDEA OF TRAVERSED LANDSCAPE AND PREFERENCES

2.1   INTRODUCTION

This chapter reviews available literature related to three key elements: the landscape, travel and tourism, and the general perception and travellers' perception. So it explores the subject of traversed landscape by addressing the definition of the term "landscape", and etymological references, their significance as a contributing factor in the fields of conservation, tourism planning and land use planning.

Some of the theories and concepts are also reviewed, in addition to the benefits of the visual landscapes in general and traversed landscapes in particular. Also, it deals with the landscape assessment research, identifying important characteristics of the perceived landscape. Further, it attempts in exploring the associations between the subject matter of traversed landscape, tourism planning and preferences. Though much literature is available for the same topic on various contexts, however, in this study the scope of the review is limited to traversed landscapes and landscape preferences, and potential of traversed landscape as a tourism attraction and a local delight.

This chapter is organised into six parts which include, landscape, perception, tourism, confluence of tourism and landscape perception, few

theories, methods and connotations of landscape and finally leads to a conceptual framework.

2.2 LANDSCAPE

2.2.1 Meaning and Definition

Landscape is an endless continuity of experiences and a continuous system of mutual relation between natural and cultural dimensions to an observer in motion (Eckbo 1969). So, the perceived visual landscape draws the attention of all types of travellers on road for the component parts or composed character it displays. This perceptual – experiential aspect has been widely noted and documented by several landscape scholars (Lynch et al 1964; Appleton 1975; Zube 1987,) around the globe.

The 'landscape' as a term varies in meanings owing to semantic differentials and possesses multidimensional quality. Hence, the visual beauty of landscape, whether it is inherent or in the eye of the beholder, is an argument continuing between the landscape experts of the 'objectivist and subjectivist' paradigm (Lothian 1999). Owing to the same reason, the scope of landscape assessment studies are found to be wide and deep, and sometimes are deficient with a theoretical framework and so referred to as 'theoretical vacuum' (Appleton 1975). So, it demands an operational definition to limit the scope of research as suggested by many landscape scholars.

Landscape is also a composite of physical components in various combinations, giving homogenous visual character to an area that may be classified as a landscape character type or unit. In view of the above, landscape is an area and space that is perceived and experienced as well. Its character and quality, in part or in combination, are the result of action, and

interaction between natural and/or human factors (Zube 1987; Crofts 1975; Herring 2009).

Ian Thompson (2009), in accordance with early interpretation by Jackson and Meinig (1976), has conceptualised the landscape as a text that is open to different readings and reinterpretations. So, 'landscape' is an idea that has an everlasting tradition in academic literature (Meinig 1976; Cosgrove 1984) and as a concept or a term, is "as much used as it is ill-defined and imperfectly understood" (Turner 1975, p.158) and so it holds a different interpretation owing to semantic differences, misunderstandings and controversies (Countryside Commission for Scotland 1970, p.1).

The Dictionary of Human Geography (fourth edition 2000) defines landscape as 'a poly-semi term' referring to 'the appearance of an area', the assemblage of objects used to produce that appearance, and the area itself, or defined as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, 2000). The word 'landscape' is also synonymous with 'picturesque conventions' (Nassauer1995), scene, scenery, setting, background, backdrop or a 'theatrical setting' (Jackson 1979), countryside, 'environment perceived' (Appleton 1975) and so on. Hence, landscape has been defined diversely all the way throughout different eras and geographical contexts. Therefore, it demands an etymological discourse, which may be of interest to every landscape analyst.

2.2.2   Etymology of Landscape

The term 'landscape' is a concoction that drifts the minds of peoples, who are defined by their needs, driven by biological, cultural and idiosyncratic dimensions (Bourassa 1991). Further, they are limited to knowledge boundaries (Eckbo 1969; Kevin Marsh 2004; Pierskalla et.al

2007). The term 'landscape' has an interesting and long history, to an extent that it also has lent a hand to evolve various theories and concepts that operate as a frame of reference to various landscape studies (Jackson1979; Tress et.al 2006).

In England, during middle ages, the term referred to the land, controlled by a lord or inhabited by a particular group of people (Lowenthal and Prince 1964). Early in the 17th century, Dutch painters referred to it as an artistic representation of scenery or a painting. Later during the 19th century, retaining the pictorial aspect of landscape it was referred to as a territory that could be comprehended in a single view. Furthermore, at the end of the 19th century, the German geographers coined and adapted the term 'landschaft' referring to different landforms in a region (Jakson1979).

In addition, a number of methods were also proposed to classify various landforms into natural and cultural landscape. Since the mid 20th century, the term landscape got interpreted in a diverse way by different scholars in different contexts, where it acquired to have a multidimensional quality (Zube et.al 1975; Bourassa 1991; Kaplan 1975; Daniel 2001; Tress et.al 2006).

Meinig (1976) has attempted to summate ten variations of the landscape dimension and its interpretations as: nature, habitat, artefact, system, places, problem, wealth, ideology, history and aesthetic, and prescribe to be responsive of the above, as a step towards effective communication. This interpretation is still a valid observation in today's context, where all landscape studies can be categorized.

Cosgrove (1985), being a human geographer, has redefined landscape as a 'way of seeing' rather than, as 'an image of an object'. He has argued that, 'way of seeing is ideological' representing the way in which a

particular class has represented itself and its property. This may have been an inspiration to most of the landscape perception and preference studies in the latter years and in the present contexts as well.

Landscape Ecologists and some environment psychologists apply the term landscape as a synonym to the word "environment". In this context it has been defined as "the total spatial and visual entity of human living space, integrating the exosphere with the biosphere and the mesosphere to the man-made artefacts within a patch or a corridor" (Naveh and Lieberman 1994, pp.4, cited in The Dictionary of Human Geography pp.429).

In addition to the above, physical geographers, have often used 'landscape' in place of 'landform' or 'topography' in line with the physiographic, geological, and geomorphologic features of the earth's crust (Naveh and Lieberman 1994), or the appearance of the land.

The Countryside Commission in the 1970s, in pursuit of protecting the rural character of England, has referred to it as "the spectacle presented by the countryside."

Recent European Landscape Convention (Florence 2000), in an attempt to reach at an agreeable holistic meaning, defined it as, "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". This has been operational in the UK since March 2007 (Herring 2009). Further, it is still debated online by forums like land studies blog (http://landstudies.blogspot.com accessed on 4/11/2006) so on.

By recognizing the above fact, it is noted that, 'landscape' holds multidimensional qualities and semantic differences; pursuit for an ideal

landscape definition is an ongoing debate. And henceforth, this study demands for an operational definition to carry out the research.

2.2.3   Evolving Landscape Meanings

The meaning and definition of the term 'landscape' is re-evolving in this modern digital era, too. To cite an example, an interesting blog on landscape studies recently drew its attention to the definition adopted in the European Landscape Convention, held under the auspices of the European Union in Florence in 2000. To quote: "Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". The discussion at the blog (http://landstudies.blogspot.com: accessed on 4/11/2006) posted few opinions on replacing 'experience by the people' rather than 'perceived by the people'. The enriching discussions on the same blog go further to argue on the word 'area' that can be replaced to a 'space', since landscape being a three dimensional entity. However, in spite of its undefined boundary to an extent, the stress to focus on landscape context in various studies is highly significant.

2.2.4   Operational Definitions and Limiting Factors

The meaning intended in this study is the overall impression obtained from viewing the land or an environment (Consgrove 1985) and its components (Crofts 1975) and character type (Brassley1998; Herring 2009; Ode, Tveit and Fry 2008; Ode,et al 2008; Polakowski 1975)from a reasonable distance. Although land includes the flora, fauna, cultural artifacts, surface soil and rock substrata, tiny landform, and waterpuddles, but all of these cannot be perceived from a distance. Furthermore, the connotations of landscape substituting scenery and vice versa that are found in early literature are still a valid cultural expression at present as well (Ian Thompson, 2009;

Nassauer 1995). Here, the landscape traversed would be limited to composition of components experienced visually by the people, consisting of four physical factors, namely, vegetation, landform, water and built form and their composition as they are experienced in isolation or in combinations (Crofts 1975;). Further, temporal factors like cloud condition, ephemeral qualities of landscapes (Jackson1979; Brassley 1998), climate and wildlife, cognitive factors like fear, complexity, legibility, mystery, and naturalness (Kaplan and Kaplan, 1975), wilderness, crowdedness, and on road city image ability (Lynch et al 1964) are though the valid factors, they are beyond the scope of this study in particular.

2.2.5   Landscape in other Disciplines

Landscape, though being synonymous with a representation of scenery by the early Dutch 'landschap' painters (as explained in section 2.2.2), it has high significance in the other field of studies. For the reason being that landscape has a direct impact and directly refers to our way of life or displays the standard of living (Jackson ; Eckbo 1969; Thompson 2009; Simonds 1961 ; Zube1989). It is explored in every field (Punter 1982; Tress, et al 2005).

2.2.5.1   Landscape and arts

Landscapes has high implications on the Artists' paradigms. It has been an inspiration to all art forms and hence the distinction between the aesthetics of art to that of landscape aesthetics is the way and to what degree it affects of our life. It is argued that though a work of art makes us to think and incite a novel perception and idea, or may even alter our course of action. Nevertheless, very few works of art have the capacity to directly change or determine our everyday life (Berleant 2002). The visual environment or the landscape are also perceived as an embodied metaphors, where metaphors

being a cognitive phenomenon (Lehari 2002). So the three facets such as perception, interpretation and quality of landscape aesthetics, as an art, are complimentary and overlap significantly to validate one another that lead to a diverse approaches of landscape appreciation (Punter (1982). An art critique, Carlson, (2001) has suggested that aesthetics of (environment) landscape can be explored by other forms of art in place of compulsive artistic models on a natural world. Further suggesting landscape descriptive terms in the literatures are aesthetically relevant, for they appreciate various landscapes.

Saito (2002) has argued on the challenges faceted by art critiques for the landscape being a frameless, temporal and object of human utility that affects life directly. So the visually perceived environment, the landscape has been an interesting subject of academic debate in the art paradigms as well.

To the point of being appreciated as an art, the visual landscapes are an unavoidable art which has the potential to reflect, relate and reform the way of human life otherwise to be precise, a constant 'human-landscape transactions' (Zube 1987).

2.2.5.2   Landscape and ecology

The discipline of ecology explores landscape in terms of species of plants and animals present, ecological zones, succession and other indicators of ecological process (Dawn Hill and Daniel 2008; Gobster, Nassaur, , Daniel and Fry, 2007; Young 2005). It has predominantly and invariably pointed against human interventions and so it has differentiated and described natural landscapes and human-influenced cultural landscapes as a positive and negative trend. Relations to ecology and landscape aesthetics are also an extensively debated issue (Gobster 2007; Dawn Hill and Daniel 2008; Belisle 2005). Further, ecological studies tend to focus on specific areas of ecological

interest and parameters are within an expert paradigm that detaches itself from common consensus.

Therefore, it has its limits in common landscapes perceived by the end users or landscape users. So, Nassuer (1995) also advice ecologists to acknowledge that the cultural expectations and the human pleasure will be the measure off any 'messy ecosystems', and so it needs 'orderly frames' that can be made familiar to culturally biased and pleasure driven people.

2.2.5.3   Physical geography

Within physical geography, 'landscape' has often been used in relation to the large scale physiographic, geological, and geomorphologic features of the earth's crust. In this perspective, the word 'landform' or 'topography' would be exact and is used by most physical geographers (Naveh and Lieberman 1994). So, the physical geographers apply aerial photography, GIS applications to measure features and trends. Further, they sometimes highlight the scenic potential, Like the Indian Himalayan mountain ranges, Valleys, Grand Canyons of Arizona, Victoria Falls between the countries of Zambia and Zimbabwe, and Great volcano are a preamble to the study but not in detail.

2.2.5.4   Landscape and the design experts

Landscape is a cultural expression of geography and a view perceived. The prevalent classical methods, explored by landscape experts, on landscape perceived, restrictedly applied, to evaluate a designed or to design a landscape setting (Appleton 1996, 1975 ; Craik 1983; Tuner 1975; Zube 1989). These methods evaluate or design with basic design elements such as vegetation, water, landform and built form and a other design parameters like colour (Porter 1982), texture, scale, line, and form (Simon Bell 1993;

Simonds 1961; 1996; Jellicoe 1960) and so on. These methods have been predominantly applied on traditional design principles such as harmony, unity, and rhythm that are also explored in the users' perspective in some cases. Contexts and credibility of these expert methods by experts are also argued in several research publications, for being exclusive and alien to the common users (Appleton 1975; Lawenthal 1964; Wherrett 2000). The design proposals are considered as too assertive and prescriptive (Thompson, 2009) that are so exclusive to the perception and preferences of the end-users, against the present demands for an inclusive development policies.

2.2.5.5 Landscape and Economic Value

It was stated by Kunz (1923) that "whatever gives happiness are value, although that cannot be expressed in terms of dollars and cents". So economic value approaches have been argued to be increasingly insufficient leading to alternate approaches (Whaley 1975; Collin 1999; Newkirt Ross et al 1983). The prevalent economic approaches such as the 'Willingness to Pay' (WTP), cost-benefit analysis (Willis et. al 1998) and various stated preferences methods are still valid and applied as well. Nevertheless, it is certain that the landscapes that are perceived have considerable economic value that cannot be entirely expressed in economic terms.

Price (1978) has discussed extensively on various ways of valuing landscapes in his book titled 'Landscape Economics' in the past. But, Price's (2000) recent chapter on 'the landscape of sustainable economics' where by concluding that treating sustainability literally and uncompromisingly is most valuable with the two key areas: 1) protecting the very best, for the benefit of this and later generations; and 2) protecting the very good relatively, by taking care of aesthetic evaluations. So, it may be said that the visual substance of landscape cannot be measured in economic terms.

2.2.6   Substance of Landscape

Landscape encompasses the whole of our external environment, ranging from highly nurtured urbanscapes to un-nurtured natural wild lands. The nature and pattern of buildings, streets, open spaces and trees - and their interrelationships within the built environment - are equally important parts of our landscape heritage (Lynch1960; Lynch, Mayer and Appleyard 1964; Cullen 1965, 2009). Landscape is important because it is a resource; archaeological and historical evidence; the habitat for all living beings; contributes to quality of life; evokes sensory, cultural and spiritual responses; and is, of course, a valuable recreational resource.

In addition to perceptual aspects as resultant combinations of landform, vegetation cover, water and buildings, landscape also represents several other dimensions. They represent the history, land use, human culture, wildlife and seasonal dimensions of an area as well. These aspects combine to produce distinctive local and regional character and continue to affect the way in which the landscape is experienced and valued. Furthermore, the landscape is considered as dynamic, continually evolving in response to natural process in various magnitudes ranging from seasonal to geological changes or human-induced need based development processes too.

2.2.7   Factors Contributing to Landscape

In the report on 'Guidelines for visual and landscape impact assessment (2002)' by the Institute of Environmental Management and Assessment (IEMA) and Landscape Institute (LI) framed a broad outline of the factors that contribute to the visual character and quality of the observed landscapes. There, the visual aspects are considered as one of the main factors that are broadly dealt with in the view of length, preference and perception.

2.2.8   Significance of Landscape Contexts

Significant thrust to operate in landscape contexts, in place of environment, is widely referred to in the operational sciences like the architectural design, planning, environmental science, and conservation fields and the like. Interest in the concept's utility for land use planning has grown and has been acknowledged that it can serve as a basis through which planners can integrate natural and cultural dimensions and issues (Zube et al 1975). For an instance, Adrian Phillips (2002), University of Cardiff and Chair of the International Union for Conservation of Nature (IUCN), in the program named 'World Commission on Protected Areas,' stated that nature conservation has to shift its paradigm from mere site oriented nature heritage conservations to environment around with the 'landscape context' in mind. The said context includes seeing the world as "nature plus people". It has a similar resonance as that of the post-Rio period. Further, visual landscapes in particular gained significance in the field of perception psychology (Environmental Psychology) 'as stimuli' (Stamps 2009; Steinitz 1990) and a valuable 'visual resource' (Gunn 1998) in travel and tourism planning as well.

In view of the above, it may be stated that landscape studies are multidisciplinary and so it is essential to address the issues through a judicious blend of various disciplines. Further it is suggested by Antrop, Tress and Tress and others (2006) to adopt a transdisciplinary approach that may fetch better results in the decision-making process (Antrop 2006; Tress and Tress 2006). Hence, the following sections on perception and travel and tourism form a part of the supporting aspect of this study to define its focus further.

2.3   HUMAN PERCEPTIONS

Perception is a complex process 'connected with movement' (Lehari 2002) and is of attaining awareness or understanding of the sensory information, through 'stimuli', such as sense of sight, smell, touch, sound and taste (Simonds 1983; Porteous 1985). On the one hand, the objects in the environment are understood by a simple sensory information as above or by preconceived notions built on the previous experiences, on the other hand. So, the people perceive environment not only on the sensory information received but also contemplate on the basis of what has already been experienced (familiarity of things). It is widely agreed that 90 percent of the perceptual intake is visual and much of the rest is auditory and tactile (Porteous 1985; Porteous and Mastin 1985; Jacobsen 2007; Hetherington et al 1993). Famous landscape architects like Simonds (1961) and Simon Bell (1993) have also observed that 85 percent of the human perception is based on sight. So, the character and quality of the landscapes are primarily understood by the vision that necessitates landscape preference studies as in the case of USA and UK since the 1970s.

2.3.1   Visual Perception Theories

Visual perception and its preferences date back to the Greeks and Romans. Plato, Aristotle, Galen, Timaeus and others relied on the principles of "like is only know by like". On the other hand, Euclid and Ptolemy and their followers relied on 'emission theory,' which suggested that the rays emanating from the eyes are intercepted by the object that leads to vision. Leonardo da Vinci (1452-1519) noted the significance of 'peripheral vision from focal vision' in the day-to-day human perception and actions. These primitive theories gave way to several modern theories in the later years (Forguson 1989; Paul Kline 1998) as well.

2.3.1.1 Visual Systems

Various psychological components involved in vision are referred to collectively as a visual system. To cite an example, Bayeson studies (years) of perception theories describe various visual sub-systems such as 'perception of motion and perception of depth'. In a nutshell, the visual system deals with an assimilation of information from the environment (Porteo1985; Hammitt 1987; Hanna Macpherson 2005; Heft and Nassauer 2000).

2.3.1.2 Perception in Motion and Mental Maps

Gibson. (1979) refers to perception as 'perception in action' stating that without action perception would serve no purpose. He described that perception and motion are the "two sides of the same coin, the coin is action." Lehari (2002), stating that perception is connected with movement, beginning from retinal movement quavering and ending in the movement of the body'. Huston (2009) has extensively reported on early motorists perception on the English landscape and so Larson(2001) describing the experiences on the move and its significance to tourism.

Kevin Lynch (1960) and Jutla (2000), in an urban context, found that the pathways of a city, the expressways, streets, alleys, railroads, bike ways and pedestrian routes are the most important city elements that shape our mental map as well. Hence, the motion induced perception of the travellers and the observed landscapes are critical in the landscape planning and design paradigm, and so forms the background of this study.

2.3.1.3 Gestalt theory: the law of visual organisation

Die Gestalt is a German word for 'form or shape'. It is used in English as a concept of 'wholeness'. Further, it is referred to as the 'Gestaltism' that acknowledges the self-organizing tendencies of the mind

and brain, especially visual recognition of figures as whole forms in contrast to the process of the simple line or curve recognition to support the quotation that "the whole is greater than the sum of the parts." 'Gestaltism' has opposed the laboratory experiments and prescribed for experimenting in real natural situation, that is, on-field experiments. Gestaltism also has its roots in Goethe, Immanuel Kant, Earnest Mach and other perception theorists. The Gestalt laws of organization have guided the study of how people perceive visual components as organised patterns, or as total, instead of many different parts. The configured pattern are determined by six main factors like, proximity, similarity, closure, symmetry, common fate and continuity (Gibson 1979). This hypothesis is still applied in the present architectural and Urban design theories, as a an essential basis for design.

2.3.1.4   Peripheral Visions, Structuralism and Behaviourism

Cognitive psychologists discard 'Gestaltism' for the reason of its inability to explain the nature of 'peripheral vision' referred to by Da Vinci . So, the Gestalt school practised a series of theoretical and methodical principles instead of analysing the object of study into a set of elements that could be analysed separately with the objective of reducing the complexity of this object.

Edward B. Titchener as founded 'structuralism' in psychology with a goal to describe the structure of the mind in terms of the most primitive elements of mental experience that focus on three individual elements of consciousness like sensation (elements of perception), images (elements of ideas) and affection (elements of emotions) components. So structuralism examines how these elements are organized into more complex experiences; and how the mental phenomena are correlated with physical events.

Concurrent to Gestalt movement, another school of thought maintains that the behaviours can be described scientifically without hypothetical constructs, which in this modern day behaviourism is termed as "behaviour analysis". They experiment on language and cognition, apply and study behaviour management of the users (Forguson 1989).

In the 1940s and 1950s, 'structuralism', a new theory of perception, came to prominence in France. Even it has influenced several disciplines including architecture against the modern functionalism movement. It was promoted by various modern architects such as Le Carbusier, Louis Kahn, Kenzo Tange, and other members of Congress International D'Architecture Moderne (CIAM) that was active during 1928-1959.

2.3.1.5   Primal Sketch : 3 Stages of Vision

David Courtney Marr's (1745-80) theorised the three stages of vision that involves a 'primal sketch', where 'raw primal sketch' locates edges and orientation at the first stage (Forguson 1989). The full 'primal sketch reveals depth, motion and shading of 2 ½ D sketch'. This is followed by the third stage termed a '3D model representation' to recognize as an object. These methods and applications are a basis of most drawing and design processes, and landscape perception research as well (Zube et al 1975; Jacobsen 2007; Prantice1997)

2.3.2   Human Perception and Landscape Perception (Perception Leads to Preferences)

People perceive with five senses: sight, touch, smell, tactile, auditory and taste, an obvious fact. But in comparison to other four senses, the visual sense is noted to be the dominant one, where it defines almost nine-tenth of our perception (Porteous 1985; Porteous and Mastin 1985; Jacobsen

2007; Hetherington, Daniel and Brown 1993), to understand the environment around, to judge and to decide for future course of action.

Despite the fact there are a few arguments that landscape studies are overly focused on, visual constructs – 'ocular centrism' (Hannah Macpherson, 2006). Nevertheless, landscape designers such as Simonds (1961), Bell. (1993) and others (Zube et al 1982; Laurie 1975; Muir 1999) also strongly believed that perception is based on sight. So, landscape designers focus on visual aspects and aesthetics as one of their primary design goals. Despite these arguments, a few earlier studies explored landscape on the basis of non-visual senses, too, like sound – 'soundscape' (Porteous 1985) and smell – 'smellscape' (Porteous and Mastin 1985) of the landscape or objects in the environment.

The human senses of sound, smell, touch and taste are engaged in various degrees of landscape experience and perception, especially on an on-site experiences and are a common phenomenon of the travellers as well, Nonetheless, landscapes description and landscape evaluation studies by and large address the visual factors (Jacobsen 2007) as suggested by Simonds (1961), Bell (1993), and Kaplan (1975) of the observed landscape.

A few significant theories of perception and landscape preferences are discussed in this review, in the limited space and time. It is also argued and agreed to a large extent that perception is not different from preferences (Kaplan 1975). Therefore, it is inferred that landscape perception is synonymous with landscape preference.

It is observed that the movement is the predominant part of any travel and so is tourism. Also it incites perception of the landscapes traversed (Larsen 2001). So, it is noted that landscape perception and preference studies are an integral part of tourism paradigm (Atauri et al 2000).

2.4   TOURISM AND TRAVEL

Travel and tourism are used synonymous to each other, although they differ in some sense. Travel is a broader concept which involves the movement of people between origins and destinations, along connecting routes, whereas, tourism is predominantly perceived as a leisure activity. Nevertheless, movement is an integral part of both. Further they possess temporal and qualitative differences in meanings (Jafari 2000). While some argue that 'tourism is a social phenomenon that reflects a society's values' (Pigram and Wahab 1997), some consider it 'as a system', in place of 'an industry' (Gunn 1979; 1994; 1998; Leiper 1995). Nonetheless, in attractions are mostly pre-programmed and preconceived in tourism and are incidental in a travel.

2.4.1   Tourism System

Tourism, that is conceived, as "a system" (Leiper 1995) than as "an industry" (Gunn 1979: pp. 94, 98) engages five critical elements, namely, information, direction, tourist, transport, and attractions (services and facilities, inclusive). As in the case of Leiper model, it has a human element (tourist); three landscape (or geographical) elements representing the role that places have in all tourists itineraries (as a generating region, transit route and destination region); and an organisational supportive element (tourism industry). Further, various kinds of environments such as the physical, social and economic act as the background of the system. Though the model is arguably ideographic, or an abstract one, nevertheless, the phenomenon of tourism is predominantly agreed as a system, where attractions are the core of the system (Ferrario 1981; Prantice 1997; Prentice and Beeho 1996;).

2.4.2   The Attractions

As observed by all tourism planners, attractions in any form are the core of a tourism system. Some also suggest that experience is the core of tourism, so attractions need to satisfy the tourists' needs, wants and expectations by offering an experience (Beeho and Prantice 1996). Further beliefs, feelings, attitudes and preferences of the travellers with different personalities are also suggested for exploration (Moutino 2000). The choice of destination by tourists is also decided by many factors of attraction, namely, season, climate, natural and cultural factors and their combinations (Gunn, Donert and Light 1996).

2.4.2.1   Climate, season and weather as destination choice

Climate, season and weather are also the prime determinants in the choice of a tourist destination for travel (Singh 1981; Williams, Peter et al 1996). The hill-stations such as Udhagamandandalam, Kodaikanal, Mussoorie, Nainital, Shimla, Gulmarg, Pahalgam and Nilgiris are crowded during summer months in comparison to winter months. Considering the above, it is suggested by Singh (1981) to market cultural sign posts (cultural symbols that may includes distinct landscapes types) and cultural festivals as a strategy to alleviate the negative influences of the climatic conditions. Well maintained, highly distinguished and marketed landscape as a cultural tourism symbol, owing to its distinct character, is a means to sustain the touristic activity in a region, especially during the lean tourism seasons.

2.4.2.2   Natural environments as destination choices

The landscape 'preference value can well be a good precedent to tourism planning and regional planning process' (Craik 1975: p. 83). This is strengthened by Peter Williams et al., (1996: p. 37) stating that 'growing

demand for tourism experience in high-quality natural environments has created a need to recognize landscape aesthetics as a tourism resource' and further stating that inherent subjectivity must be recognized keeping track of what really counts for tourists as attractions. Curtis (2003), by telephonic method of survey in Ireland, has found that the water-based natural environments like the seas, rivers, and estuaries are the most preferred destinations for leisure activity.

2.4.2.3   Cultural heritage as a destination choice

Karl Donert and Ducan Light (1996) identify 'Heritage Solution', a process of using the past to regenerate the present (Howison 1987) as a strategy to alternative tourism. Howison, while citing Urry (1988), has identified that in place of 'Post Mass Tourism', a tourism of the Post-industrial Society to the 'Post Fordist Tourism' or 'Post Modern Tourism' (Prantice 1997). In them, preferences are critical, where the tourists of the post modern era are seeking small scale, segmented and special tourism. Further, tastes of these tourists are very selective, fuzzy and they seek unfamiliar experiences. On the same line of thought, Prentice Richard (1997) recommended that offering alternative products could benefit tourism, in addition to taking advantage of the natural environments (heritage and historic legacy) for tourism development.

Some scholars are sceptical about isolating the environment to protect from the negative impacts of tourism and criticize that it may not be the proper option and is a too simplistic view (Pigram and Wahab 1997: p. 29).

It is observed, in an earlier study on the 'economic impact of tourism' by World Tourism and Travel Council (WTTC), that the market potential of Indian tourism, that includes domestic and international, is

anticipated to contribute almost 5.3 percent of India's Gross Domestic Product (GDP) by 2001 (Cohen 1979).

2.5   CONFLUENCE   OF   TOURISM   AND   LANDSCAPE PERCEPTION

The phenomenon of travel, tourism and perception of landscape/s has everything in common that they can validate each other. The reason being that the landscape provides a setting for travel and tourism whereas the travel, a major part of tourism, can facilitate landscape perception and its experience as attractions in many forms. So the traversed landscapes are also a significant tourism attractions as 'travellers glance' and gaze at them (Urry 1988) to find recreation and leisure.

2.5.1   Traversed Landscapes and Tourism Attractions

In tourism planning studies, 'driving for pleasure', referring to the use of (scenic) roadways, continues to be one of the top travel markets and recreational activities (Dunn 1973; Gunn 1994; 1998) for two instances. One, it is one of the biggest reasons of success for tourism industry in America and in European countries for their excellent roadways are both cheaper and a lot more accessible (Mail Today 2008: p. 8).Two, although some scenic highways are purely the access routes to regions, most lie within the context of a tourist attraction (Gunn 1994; 1997) and are potentially the 'intangible' and 'visual' tourism resources.

Similarly now-a-days, going for a drive along the scenic East Coast Road (ECR) of the Chennai Coastal Region, Tamil Nadu is considered a pleasure. Although it is a major access route to the southern regions of Tamil Nadu state with its sound technical quality, there are many clusters of tourist attractions along the ECR such as the theme parks, backwaters, beaches,

hotels, IT companies, plantations, salt panes, Buckingham Canal, fishing activities and monuments and several others within the traversed landscapes of the ECR that facilitate and promote tourism activities.

2.5.2   Landscapes Motivate Tourists

In Kerala, one of the southern States of India, a study was made by Rajasenan and Ajit Kumar (2004) to deduce the factors that motivate foreign tourists to visit India. It was observed that heritage and culture were the prime factors that motivated them, followed by other factors, which include spiritual experience, viewing the Taj Mahal and seeing wildlife. Further, the study revealed that the same tourists preferred to visit Kerala, due to a few reasons, which included seeing people, watching wildlife, for relaxation, to see art forms of the State, scenery and natural beauty, to take trips on the rivers and backwaters, and a beach holiday. This reinforces in a sense the tourists' preferences for landscape types.

It was also observed that the pleasant visual character of the landscape types and landscape components in a landscape would expand the scope of the overall travel experiences (Prantice 1997; Gunn 1994; Urry 1990). There is also a growing demand for such experiences. As stated by Williams et al (1996), the "growing demand for tourism experiences in high quality, natural environments has created a need to recognize aesthetics as tourism resources". So it can be concluded that landscape type/unit and components perceived are the potential tourism attractions and have a vital role in tourism and landscape planning.

2.5.3   Increasing Tourists on the Road

Despite the fact that airways, railways and roadways are the main modes of reaching tourist destinations, major tourist centers are well

connected with roadways and railways than airways. Further, the inbound domestic travellers prefer the economical rail and road travels, especially the roadways for its immediacy to the destination and of the traversed landscapes. To cite an example in India, inbound domestic tourist visits within the country is 740 million with 10.7 percent annual growth rate and foreign tourist visits to Indian tourist centres is 5.58 million at 8.1 percent growth in the year 2010 (http://tourism.gov.in/writereaddata/). This may grow further considering the fast establishing Indian road networks. Moreover, the traversed landscapes would also be considered as attractions for the tourists as the 'roadside scenic areas' are within the existing tourist circuits and perhaps are on the other prospective roadways as well, as indicated by many tourism planning experts (for example: give Indian studies here and then the foreign ones Dunn 1973; Gunn 1998; Eby and Molnar 2000). In view of the above, that is, tourists' and travellers' preferences, traversed landscapes could be explored for improving the quality of the landscapes and also the 'landscape tourism,' further.

2.5.4   Travellers and Tourists Protect Landscapes

The responses of the local travellers and tourists would draw attention to the critical planning issues associated with the area of travel routes and pave way for coordinated efforts between Tourism Departments and other developmental authorities. So, Lucas (1995) formulated six key principles in context with the 'principles for tourism in protected landscapes': 1. Conservation; 2. Enjoyment; 3. Rural Economy; 4. Development; 5. Design; and 6. Marketing. Further, he argued that tourism industry can protect the distinctive landscapes by supporting conservation measures through joint initiatives with the public, private and voluntary organizations. On the same line, he has also suggested the identification of those distinctive landscapes by landscape perceptions and preferences as a user consensus.

2.5.5   Landscape Tourism

Tourism is a system that functions more than an industry. Gunn (1994) and Quattrone (2002) stated the same and elaborated tourism as an inter-correlated web / layers of economy, culture and environment, with multiplier effects on the society. Tourism sustains when the three layers of the system interplay among each other, optimally, to strengthen the system further. Nevertheless, among the three layers, the environmental setting, and 'the landscape' set the base for tourism system without which the other two become incongruous.

Tourism activities are predominantly an outdoor recreation (Hammitt 1987) where travel is a critical aspect of tourism. The outdoor settings and landscapes of different conception are referred to as the visual resources or intangible resources (Zube 1975; 1977; 1987; 1988), tourism attractions (Gunn 1979; 1994; 1998), retrievable tourism products (Jafar Jafari 1981), biophysical parameters (Peter Williams et al 1996) and so on. Hence, the landscape settings are a major and fundamental base for tourism development.

2.5.6   Landscapes as Tourism Attractions

The paradigms of tourism and landscape appreciation intersect at a point where the tourist actively gazes at whatever comes before his visual range (Urry 1988) during a journey. He collects images of the landscapes and the signs and compares 'off-site markers' with 'on-site markers' which would frame the opinions about the experiences in due course of time.

Lesley Head (2000) foresee one of the uses of landscape as a visual tourism resource, besides being an art, ideology, and culture. He further

noted on an environmental change and ecological pressure by linking cultural heritage sites with the commerce.

Tourism acts as a system (Gunn 1994; Quattrone 2002) where tourists and attractions are the core of the system and visual resource is one among them. Jafari (1981) has listed tourism attractions such as natural, artificial and man-made as background tourism elements. Further, he has stated that the landscape, whether natural or man-made, is an important visual resource and is a retrievable tourism product; that is, it can be a memorable experience to be recollected post-facto, despite the need for other tourism oriented products such as accommodation, food, transport, recreations, and also resident oriented products.

In a survey of the Pilot National Recreation Survey (Keelee 1965; cited by Dunn1973), it was reported that 'going for a drive' with the destination less important than the journey itself was perhaps the commonest form of recreation. This phenomenon is also referred to as 'visual consumption' or 'aesthetic cosmopolitanism' (Urry 1995), 'aesthetic engagement' (Arnold 2002), 'experiencing the landscape', 'experiential mode' (Cohen 1979) and so on. Cohen (1979) has further considered experiential mode as one of the five modes of a tourist's experience (recreational mode, diversionary mode, experiential mode, experimental mode and existential mode). Most studies have addressed the effects of tourism on peoples and settings (landscape) than the effects of tourism setting to the tourists'. For example, landscape and culture are a setting for tourism, where the tourist consume or experience the whole and judge those in the process. As stated by Prentice R. (1997: p. 217), 'this implies that the experience of tourists needs to be measured both at the level of specific attraction and in terms of their whole trip, and the development process represented by memory studied.' Though tourists' preferences are measured with reference to

infrastructure and facilities at the destinations, but rarely are the visual qualities of the destinations taken into consideration. 'Level of specific attraction' like the visual quality of the traversed landscape between destinations is highly neglected. So, there is a mismatch between the demand and supply of tourist attractions.

2.5.7   Tourists' Demand and Supply Divergence

There is an imbalance between demand and supply sides in tourism strategies (Gunn 1994; Prentice 1997). As Prentice has stated that 'without the knowledge of what tourists are seeking in terms of experiences and benefits, the effects of management strategies are likely to be haphazard.' And hence, strategies without information on tourists' and travellers' demand in all dimensions that include landscape experiences and preferences during travel would neutralize any tourism development strategies. Further, it is explored recently that the rising 'new age' oriented special interest travellers demand personal development and non-traditional spiritual practices and hence the US New Age tour operations rank the tour types into: power-sites, eco-spirit, shamanism, vision quest, health/wellness and all others (Attix and Shelley 2002). So, the recent tourism paradigm explores the divergence of the demand where supply has to be met accordingly (Prantice 1997;Jafari 1981;Jacobsen2007; Gunn1998). In that case, the traversed landscape can be another emerging demand.

2.5.8   Traversed Landscape Attractions

Jonas Larsen (2001) has stated that, "experiences of mobility are an integral part of the tourism experience. Touristic transportation, unlike coercive everyday mobility, is not only a trivial question of overcoming distance and reaching; but it is also a way of being in, and experiencing various landscapes." This strengthens the earlier idea of Collin Price (1978)

on traversed landscapes that, "The experience of some landscapes is more or less incidental to the purpose of getting from A to B". for example, the rail jouney from Kalka to Shimla or the motorway journeys from Jammu to Srinagar in India, which facilitate 'travellers glance'(Larsen 2001 and 'tourist gaze' (Urry 2002). So traversed landscape experiences on roadways and railways are an integral part of tourism as well.

2.5.9   Travellers and the Traversed Landscapes

In addition to the visited landscapes or places, the incidental experience of the landscapes passed through, that is, the 'traversed landscapes' also play a role in the overall experience of the travellers, despite the prime reason to scale the distance (Price 1978). This is reported as the 'visual occupancy' (Shannon et al 1995) of the travellers on a journey. It has also been observed as the 'tourist gaze' in a tourist's perspective (Urry 1990) or 'the travellers' glance' in an 'existential and experiential mode' (Prantice 1997). The present study would therefore limit its scope to traversed landscapes observed by the travellers during their travels from one destination to another.

2.6   THEORIES, CONCEPTS AND CONNOTATIONS OF LANDSCAPE STUDIES

As noted on etymology of landscape in the introductory chapter, the multidimensional qualities give rise to various theories, concepts and connotations. Though some of them conflict with others, the basic objective has always been to highlight the substance, scope and potential of landscape oriented studies and validate each other.

Some theories are on the basis of fundamental biological existence of living forms, as in the Prospect and Refuge Theory (Jay Appleton 1975), Habitat Theory, Adaptation Level Theory, and Information Processing Theory

(Kaplan and Kaplan, 1989). Some are on the basis of socio-cultural constructs - Gothean Theory (Brook 1998). Piaget's Theory of Knowledge (Kevin Marsh 2004) and psychological interpretations pertaining to landscapes such as the Tophophilia (affiliation to landscapes) and Topophobia (fear of the landscapes) (Neil Leach 2007), Restorative Environment Theory (Ulrich 1979; Parsons et al 1998), landscape heritage and history theory. Some of these pertain to ecological and environmental contexts. Further, some theories have been proposed to address the aesthetic content of landscapes, their recreation potential to alter or enhance the existing landscape by planning and design strategies (Bourassa 1991). A few other theories, relevant to aesthetics and landscape preferences, are discussed in the following chapters.

By and large, these theories sensitise the issues and concerns of the subject of landscape. These theories are formulated on the basis of behavioural patterns of human and living things in 'the environment perceived' (Appleton 1975) or the perceived visual landscapes.

2.6.1   Landscape Research

The landscape theories and concepts are an outcome of an expanding potential of landscape research and vice versa. Landscapes are studied as a multidisciplinary exploration. Recently, the level of exploration has been considered as a transformation from an interdisciplinary to a trans-disciplinary context. It has been highly integrative with academic as well as non-academic participants (Tress et al 2006). Hence, landscape research fields, at various levels of exploration, are still a valid ongoing pursuit of the landscape paradigm.

2.6.2   Research Contexts

Besides the two paradigms of landscape research contexts (Lothian 1999) such as the 'objectivist and subjectivist' inquiry, a recent publication by

Thompson (2009) has compared landscape research in a different context altogether. The study has extended further to the objectivists as absolutists; traditionalists (including modernists) as rationalists; universalists as natural scientists; analytical philosophers and subjectivists as relativists; postmodernists as social constructivists; contextualists as continental philosophers, including social sciences and humanities. Hence, the context of landscape research has borderless potential that expands and gives scope for limitless intellectual quest. However, the current study would limit itself to highlighting the above and in no way would deliberate beyond the scope of the objectives of the research.

2.6.3   Universal Aesthetic Theories and Concepts

There are several theories and concepts which are addressed within two contrasting paradigms - objectivist and subjectivist paradigms (Lothian 1999). The former regards quality as inherent in the physical object, whereas the later refers quality as a product of mind. Objectivist sets rely on formal aesthetical and ecological approach which is predominantly an expert approach, while the subjectivist sets by cognitive, psychophysical and experiential approach to assess the aesthetic qualities of the physical object. Lothian (1999) has also extensively discussed and summarized the general philosophies of beauty and concept of beauty in his research, where landscape is inclusive of the term 'physical object,' discussed earlier.

2.6.4   Theories and Concepts of Landscape Experience and Preferences

Some theories and concepts focus on the experiences and preferences of the landscapes, in particular. For example, in a recent paper, Ode et al (2008) have identified nine concepts that can describe landscape characteristics such as complexity, coherence, disturbance, stewardship and

'cues to care' (also see Nassauer 1995), imageability (Jutla and Raindar 2004; Lynch 1964), visual scale, naturalness, historicity and ephemerality (Ulrich 1979; Kaplan and Kaplan 1989) and nine theories of landscape preferences such as Biophilia, Information Professing Theory (Kaplan and Kaplan 1989), Aesthetics of Care (Nassauer 1979), Sense/Spirit of place / genius, loci / vividness, topophilia and topophobia (Neil Leach 2007), Prospect-refuge theory (Appleton 1996), Restorative Landscapes (Ulrich 1998), Biophilia hypothesis, Landscape heritage, Historic landscapes, and experiences and so on.

These concepts are supported by different theories explaining people's experiences of landscape and their landscape preferences. Further, the Ode et al (2008) article identified physical landscape component indicators for measuring those concepts and theories, and relevant data sources necessary for measuring it. Furthermore, it is observed by (Bourassa, 1991) that biological laws, cultural rules and individual idiosyncrasies affect landscape preferences and perceptions.

The present study, in particular, draws inspiration from Zube's (1987) 'transactional concept' of human and landscape interaction and component approach to landscape evaluation (Crofts 1975; Appleton 1975) and landscape character classification as landscape types are explained in the following section.

2.6.5   Components Approach to Landscape Evaluation and Preferences

To a large extent, most landscape scholars dissect the 'unit of study' into 'landscape units' (Mata Olmo and Fernández Muñoz 2004; William Blair, Larry Isaacson and Grant Jones 1979; Acar et al 2007; Manuel Arriaza1 et al 2005) as component parts or features for landscape

perceptions and preferences (Zube 1975; 1980; 1987). The component parts are independently measured in isolation or in various combinations to arrive at the landscape visual value or perceived landscape value. For example, Schauman (1979) identified five landscape elements (components) known as vegetation, landform, water and structures that can be mutable by human action and the sky.

In some landscape evaluation studies, the starting point is landscape classification, that is, to identify the regional landscape components and regional landscape types (William Blair Larry Isaacson and Grant Jones 1979). Similarly, Manuel Arriaza1 et al (2005) while comparing two evaluation techniques (direct and indirect methods) identified components such as moving water, amount of water, and percentage of vegetation cover and type (vegetation), negative and positive man-made elements (built forms) in addition to a number of colours, horizons (landforms), scale effects, focal views, degrees of wilderness, presence of alignments, and internal contrasts as variables to be regressed to identify explanatory variables, that by and large point towards the four physical landscape components selected for the current study.

Isik Sezen and Sevgi Yilmaz (2010), ranking attractive features in their study, identify the presence of vegetation, water element in the form of icing, landslides, avalanches (as negative elements), landforms in the form of interesting rocks, and stones, built forms in the form of ethnic villages, as the main components that are liked or disliked. In the body of a vast literature, most of the studies refer to four main physical landscape components that are quantitatively measured: vegetation, water, landform and built form in various expressions within the site context. For instance, vegetation expressed as trees, woodlands, agricultural fields, and forests and water expressed as lakes, rivers and sea that are specific to the sites. Further, the presence or condition

of the physical components, individually or in certain combinations, evokes emotional or perceptual responses – both negative and positive. This is also referred to as the 'situational contexts' (Gobster et al 2007) such as safety (Isik Sezen and Sevgi Yilmaz 2010; Stamps Arthur 2009), noise (Jacob Benfield et al 2010), cleanliness and care (Nausser 1995), and informative signboards (Parsons et al 1998; Gary Hampe and Noe 1979). It is referred to here in this study as 'civic components' which are also explored by many scholars.   Similarly, the space related attributes like spaciousness (Julio Hernandez, Lorenzo Garcia and Francisco Ayuga 2004; Stamps Arthur 2009; William Blair et al 1979) due to combinations of landscape elements (referred to in this study as spatial components) are also explored in detail by many scholars in different contexts. So these are explored in different 'landscape contexts' and 'situational contexts' (Gobster et al 2007) by applying different survey methods, analytical tools and techniques, some of which are discussed in the methodology chapter.

2.6.6   Characterization Approach for Evaluation of Landscape Character Types

This approach is considered as descriptive (landscape character) rather than a normative one (landscape quality). However, it is considered useful for subsequent evaluation, as in Price (1978) that 'quality is the excellence of the character, and so the distinct character defines the merit of the observed landscape'. So, landscape characterization is the process of identifying consistent patterns of (physical landscape components) elements in the landscape that make one landscape different from the other (Brown 2008; Scott 2002; Otero et al 2007; Ode Åsa, Tveit Mari and Fry Gary 2008; Herring 2009; Simonds 1983; Bell 1993).

The Land Use Consultant (LUC) of the Countryside Commission for Scotland stresses on characterization as an objective method of comparing

landscapes in different scales such as the local, regional, national, and international. He further defines five objectives on any landscape survey and classifications (cited by Turner 1975: p. 158). Further, it has been referred to as the 'total landscape' by Eckbo (1969) and perceptual character by many others (Zube 1975,1989; Craik 1975,1983; Herring 2009; Shannon, et al 1995).

Presently, the process of characterization also, to a very large extent, relies on human perception. In its absence, they are debated for its validity as a landscape planning tool and reviewed further. In England and Scotland, it is one of the prevalent methods applied to identify distinct landscapes to be protected. However, it is widely considered authentic if extensive public consensus is obtained. Landscape character assessment is an evolving phenomenon and is a current focus in Europe, especially in planning, management and policy, in particular (Brown 2008; Ode Åsa 2008), and is a guideline for Landscape and Visual Impact Assessment (Scott 2002). An attempt by Scott (2002) to measure and map public perception by a new landscape resource assessment technique for the Countryside Council of Wales that forms a part of a LANDMAP process of Denbighshire county that identified 10 'landscape character' areas.

In this study, due to the non-availability of tailor-made 'landscape character' area map for the chosen case study region, at any local or the state agency, the characterized landscape types have been identified by the scholar with limited resources. They have been identified with the help of the existing land use and land cover map (scale 1:50,000) using GIS software (with certain criteria explained in Chapter III) and on-field observations. Further, the character classification is limited to basic regional level scale, as 'landscape character types' observed along the vista, in order to keep the database manageable for the travellers landscape preferences survey. In spite

of it, it has potential to categorize further into several sub-classes, as suggested by many scholars in different geographical contexts (Simonds 1983; Brown 2008). Brabyn (1996) has been cited by Scott (2002), in the same case study. Nevertheless, in this study, landscape types are restricted to six units, considering the manpower, technological requirement, and time constraints.

In the case of component and characterization approach applied in the landscape evaluation, the 'taxonomies and dominant definitions' have to be 'relevant to the perceptual / cognitive processes of user-participants (Zube 1980) for the reason that the common average observers are not familiar with the abstract, compact vocabulary of the experts. So, this study has used explicit and user-relevant taxonomies as simple as possible and substantiated with the scene samples in need of clarifications.

2.6.7   Utilitarian Preferences: Liking a Landscape Type for a Purpose

The introductory chapter has explained landscape components and landscape character types as a unit for measuring preferences. But, there are other modes of preferences. They are driven by their utility. It is a valid academic pursuit that can be addressed for specific landscape studies. It is very realistic that people attach some purpose to particular landscape character types, such as agreeing for a long period of association like 'to reside' or moderate period of association like 'for recreation' or temporal and complete utilitarian purpose for a short period of association to scale distance to reach other intended destination 'to pass through'. Given the fact that preference for aesthetic beauty of the landscape may or may not correlate with other pragmatic use for the same landscape character types (Zube et al 1975), there are reports that scenically preferred wilderness or forest landscapes equally evoke fear for its isolation from the main human activities among observers. Some studies addressed it as 'development preferences' (Brown, G

2006). For example, Gregory Brown (2006) has evolved a method to measure and analyse tourism development and residents' development options observed, that tourism development preference is closely associated with recreation, economic and scenic landscape values, whereas residents development preference are closely associated with recreation, economic and real estate land values. And so, preference for no development is closely associated with wilderness, therapeutic and intrinsic landscape. The perceptual-experiential aspects of the travellers of the landscape traversed are of immense value for the reason that the idea of landscape is predominantly conceived and gauged by the end-users in all walks of life (Zube 1975; Hammitt 1987; Daniel and Boster 1976; Selman 2004; Dearden 1984; Meinig 1976; Clay and Daniel 2000). So, it is to accentuate the fact that landscape experiences are gauged on the basis of presence of some landscape components or features within (Crofts 1975; Zube 1975; Hammitt 1987; Simonic 2003) or its composed character referred to as the 'landscape character type' or 'landscape unit' (Robert Brown, 2008; Zube 1975, 1987), or landscape visual type (Jurae Kamicaityte Virbasiene and Janusaitis 2004). Further, they are also gauged by perceptual view prospects, spatial conditions perceived, or observed civic facilities as a manifestation of 'landscape care' (Nassauer 1995) or 'disturbance' (Hammitt 1987), and thus, as a consequence liked or disliked in some order.

The landscape character type and different types of likes or dislikes by the observers mutually interact, to a large extent, which is referred to as the 'transactional concept' (Zube 1987; 1975). For the reason that people tend to associate specific functional value to the landscapes observed and liked, their type of likings may vary and may consider the observed landscape suitable for a residence, or for an outdoor recreation or for its scenic beauty or merely to scale down the distance to reach the other side. Further, their strength of liking tends to differ in various degrees.

Information on landscape preferences, liking/disliking, is observed as an important element of decision making process in design, planning and management fields. The above would also authenticate the entire process, if consensus of the end-users or referred to as "landscape users" by Appleton (1975) is arrived at. Therefore, the obtained agreement and disagreement on landscape utility or usage, as a result of landscape experience, is said to enrich the process of land use decisions as well.

Traversed Landscapes

It is also argued that landscape experiences are evoked by various ways of motion. In other words, motion is also observed as a means to experience the surrounding landscape (Hetherington Daniel and Brown 1993). So, the sense of landscape experiences and travel, as one form of motion, is the one and one of the same facet.

Means of travel to reach a destination are many, which include road, rail, air, and water. There are people who travel as pedestrians as well. The most extensively used means of travel through the regional landscapes is the road or rail, as against air and water. Roadways offer several opportunities for visual exploration of the regional landscapes due to the 'immediacy of experience' (Houston 2009), in comparison to the restricted view of the rail or airways. Hence, the roadways are a better means of experiencing and appreciating presence of physical landscape components, of any roadside, and henceforth, roads are the potential for scenic byways which, in some cases, are considered as a destination by themselves by the travellers and tourists (David and Lisa 2000; Aitken et al 2006; Akbar et al 2003).

The perceived visual landscapes, on roads, are appreciated for the presence of the four primary components, in combination or in isolation: vegetation (Akbar et al 2003), water, landform, and built form (Gary and Noe

1979; Gunn 1979; Isik Sezen and Sevgi Yilmaz 2010), on the one hand, and are appreciated in totality for their composite landscapes, as the 'landscape character types', of various character and quality of the region, creating an image (George Deasy 1942; Kevin Lynch 1960; Lynch Meyer and Appleyard 1964; Willis Garrod and Harvey1998; Parsons et al 1998; Clay Daniel 2000; Gregory Brown, 2006; Sullivan and Lovell 2005; Sezen and Yilmaz 2010) and/or in addition appreciated on the basis of information it provides to evoke some feelings such as the scenic beauty, complexity, naturalness, fear, mystery, openness, spaciousness, cue for care, prospect and refuge. So, by understanding what of the above that gives visual pleasure to the observers as a result of 'visual occupancy' (Shannon et al 1995), at motion and corresponding measurement is a simple practical method of evaluating visual (scenic) quality (Clay Daniel 2000; Kevin Lynch 1960; Gordon Cullen 1965; Lynch Meyer and Appleyard 1964; Zube 1975; 1987; Leopold, Ribe 1994; Dearden 1984; Kaplan et al 1975) of the region.

Lash and Urry (1994: pp.252-253) have argued that "modernity is a society on the move" (cited by Jonas Larson, 2001: p. 80) and so the ever increasing modern age road travellers and their consequent 'gazes' and 'glances' on the content and quality of the roadside landscapes would decide their satisfaction and the levels of intensity and feelings from journeys, and further their preferences for the perceived landscapes. Furthermore, the studies of perceived landscape preferences and their significance in travel, tourism and planning disciplines are highlighted, as the 'touring tourism' by Gunn (1979) and by many others. Hence, exploring the road travellers' landscape preferences or the 'traversed landscapes' in the form of identified 'landscape components' and composed 'landscape types', form the bases of this study.

2.7 GENERAL AWARENESS OF PERCEIVED LANDSCAPES IN INDIA

The necessity to monitor the quality of perceived visual landscapes along the roads has gained momentum in Indian print media, in recent years, unlike the same being widely documented in other countries, especially the developed ones. In addition to the consciously designed and maintained urban landscapes, the non-urban landscapes have also been vulnerable, due to land development processes, the emerging liberal market economy and the lack of a visual landscape policy or guidelines in India.

An increasing number of publications in print media address diverse issues of the visual/perceived landscapes like the parks or open spaces, encroachments and city eyesores (Jothi Sharma. Times of India, New Delhi, Nov 10, 2005), the 'excess hoardings and commercial lightings' (Rucha Biju Chitrodia 2009), special drives to beautify roads (TNN, 2009), habitat discipline (Subramani 2005), and beaches (Balaji 2003), and upkeep and cleanliness of the city environment by various authors in various parts of the country. On the contrary, participation of the road travellers, who are the primary consumers of the city environments such as local commuters, national and international travellers, in the resolution of these issues, is however minimal or rather nil, due to a lack of public awareness and forums. That is, it is most evident from a lack of any documented or published national data on the subject.

A local news publication brought to public note, concerning the unregulated size and illegally erected hoardings on a park area of the Anna and Adyar flyovers in Chennai, which visually 'mar the cityscape,' questions the inappropriate size and location, licensing formalities, and also refer to the travellers' discontentment on the presence of illegal hoardings (The Hindu, August, 29, 2004). However, it only highlights the concern of the commuters'

inconveniences and not the perceptual traversed road landscapes. In another case, the High Court of Chennai has prohibited the city authorities from regularising the unauthorized structures built after 1998 and stressed the need for 'habitat discipline' (The Hindu, February 3rd, 2005). This incident is again by way of highlighting the rising concern for visually inappropriate living environment as well as violations of building regulations by the unscrupulous builders.

In another article in the Times of India, Mumbai (Chandrika Mago / TNN, 2004), it is now apparent that the Ministry of Tourism, Government of India, has persuaded the Indian film industry to focus on all types of natural and cultural settings in India for filming, so as to be in line with the foreign countries, reinforcing the value of visual potential of landscape varieties in India. From a recent news report, it is learnt that the Government of Delhi has allocated 'Rs. 2,750 million for the beautification of roads,' particularly for those around the Games Village for the recently held Commonwealth Games 2010 in New Delhi (TNN, Times of India, New Delhi, 30th October 2009). This further highlights the issues of traversed routes and concerns of the government authorities for the quality and content of the perceived visual landscapes, preferred for the sportspersons and the travellers of the games.

While the issues and concerns are seemingly isolated instances, they do broadly signify the value of the 'perceptual-experiences' (Zube 1987) of the observed landscapes - an area or a corridor / vista along the roads, which needs to be examined in a 'landscape context'.

It is also extensively reported by several authors that the landscape experiences of the roads have an effect on the mental and physical health conditions of the road travellers (Velarde et al 2007; Parsons et al 1998), who are local commuters and different types of tourists.

2.7.1   Automobiles as a Means to Experiencing Road Landscapes

The 'immediacy of the experience' of roadside landscapes is possible in an automobile, which makes for the most efficient means of experiencing the regional landscapes, as noted in Houston (2009) and (Isik Sezen and Sevgi Yilmaz 2010). Increasing motor ownership, due to changing automobile-driven modern lifestyles and improving road networks have begun to inculcate a culture of gazing and glancing (Jonas Larsen, 2001) through the passing landscapes and thus people prefer a pleasant landscape experience on their road travels.

A survey posted online by the Financial Express (expressindia.com) (2005) about the US-based Consultancy Keystone's prediction on the escalating number of automobile vehicles has it that India would become the world's third largest automobile market by 2030, after China and the US. Moreover, the size of Indian vehicle market is likely to cross over 20 million with consistent GDP growth rate of 6 per cent, with per capita income, population growth, and vehicle ownership propensity as propelling variables. Parallel to it, another census states that Chennai as the fourth of the top ten urban centres in India with the highest number of car owners during 2003-04 (43 car owners per 1000 population) (Draft Master Plan for Madras Metropolitan Area, 1995). Hence, the increasing access of the Indian middle income groups to private vehicles and their consequent demand for travel as an important recreation with enriching visual traversed landscapes reinforces the importance of this subject to be addressed in the current and coming years.

Another survey has reported a change in the modes of travel, supported by the rapid increase in the number of personalized motor vehicles and shift from public transport modes, for day-to-day travel (cited from the CMDA Master Plan 2011). In India, the number of two wheelers has

increased from 87,000 to 433,046 units between the years 1984 to 1992, due to foreign collaborations with the auto industries. Similarly, the number of cars has increased from 34,500 to 127,159 units in the same period. Recently, it is reported that the trend has increased in momentum after several auto companies have established and offered motorized cars and motorcycles for competitive prices and modes of payment in India (TNN, 2nd Feb, 2010). Further, the Society of Indian Automobile Manufacturers (SIAM) has projected that the volume of automobiles on Indian roads would reach 5 million by 2015 and more than 9 million by 2020 (http://www.siamindia.com/scripts/domestic-sales-trend.aspx accessed on 2011 Jan). Introduction of indigenous small car 'Nano' for just around Rs.130,000, brought car ownership to an affordable range by the Tata Automobiles in India ("India, the second fastest growing auto market after China", thehindubusinessline.com. 2010-04-10, Retrieved on 2010-11-28) that may facilitate motor-driven culture in the near future. In view of the above, demand for road travel and consequent scenic, traversed landscape appreciation along the roads would play a significant role in the near future.

2.7.2   Increasing Trip Rates

In accordance with the Comprehensive Traffic and Transportation Study conducted by the CMDA, per capita trip rate is 1.30 per day and 5.88 per day for household trip rate by the residents of Chennai Metropolitan Area. This may increase further in view of the rising mortised vehicle ownership. In case of total travel, almost two-fifths (21.8 % + 18.8 % = 40 %) are for work and school trips, whereas three-fifths (60 %) are for other purposes, mostly related to recreation, shopping, and personal purposes. This again strengthens the fact that increase in mobility of people on roads would demand better quality of travel between destinations in the near future, which is beyond the technical quality of the road.

2.7.3   Expanding Indian Roadways

There is a promising scope for the traversed landscape study considering the enormous scale of the Indian road network that is still improving and extending further. As cited online by Wikipedia that 'Indian road network' is the third largest road network in the world (3.31 million km), even density of the Highways network of India (0.66 km / km^2 land area) is higher than that of the US (0.65 km / km^2) and China (0.16 km / km^2) or even Brazil (0.20 km / km^2). Since 2002, the Government has initiated the modernization and improvement of the road infrastructure for passenger and freight movements to boost the already jubilant economy. In consequence, the State Highways and the District Roads and Rural Roads have been improved by the respective State Governments, correspondingly. It is also estimated by Goldman Sachs that US $ 1.7 trillion are needed to be spent in a decade on infrastructure projects in India, which partly include road networks (http://en.wikipedia.org/wiki/Indian_Road_Network), and henceforth, the scope of landscapes to be observed by the road travellers, especially the regional ones, would gain momentum in the immediate time to come and so awareness and demand for pleasant traversed landscapes will rise as a consequence.

2.7.4   Demand for Landscape Variety

Rajasenan et al (2004) have reported on the factors that motivate the foreign travellers to visit India, and observed that heritage and culture are the prime factors that motivated them, followed by other factors, which include spiritual experience, viewing the Taj Mahal and also seeing the wildlife, as well. Kerala has been reported as one of the frequently preferred State in the southern India, due to its scenery, natural beauty, rivers and backwaters and beach holidays in addition to culture, people, wildlife, relaxation, and art forms. So, it is amply clear that pleasant landscape

character types and landscape components have been reported that the pleasant visual character of the landscape types and landscape components would expand the scope of the overall travel and tourism experiences. It has also been reported that the increasing demand for such experiences in various contexts, by many scholars in their earlier publications around the world as well (references). It is further suggested that such experiences would expand the scope of the general travel and tourism experiences (Prentice 1997; Gunn 1994; 1998; Urry 1990; Williams et al 1996; Dunn 1973; Lynch 1960).

2.7.5   Lack of Concern for Visual Quality

In India, the policies and recommendations focus primarily on the physical needs, that is, to develop infrastructure, whereas the emotional needs and aesthetic needs are conspicuously overlooked or uninformed. There seems to be a state of dichotomy that exists on the issues and concerns of visual landscape quality. That is, on the one hand these issues are revealed in print media and, on the other hand, concern, in any form, for 'visual quality' does not figure in the Master Plans or in the Regional Plans. Documents also suggest that natural landscape components like lakes, hills and undulations on landscapes are perceived as a 'Development constraint'(pp. 164-65, Chapter IX, "Development Potential and Constraints, District Regional Plan, Kancheepuram, DTCP, Chennai) rather than as a 'visual resource' for the local tourists and travellers, or even the general public.

In India, urban, rural and the forest environments are regulated by various institutional authorities such as the autonomous Corporations, focusing on the maintenance and management of the civic facilities of the metropolitan cities, and various development authorities like the Delhi Development Authority in Delhi, Chennai Metropolitan Development Authority in Chennai which are responsible for land allotment and development process; Town and Country Planning Organizations (TCPOs) in

the State and the Centre which deal with the regional and rural development, whereas the Urban Art Commission limits itself to the issues of urban visual quality. These organizations are in the process of finding good mechanisms to incorporate public participation in such matters. The Ministry of Forests and Environment focuses on the issues of designated reserved forests. There also seems to be a lack of mechanism to coordinate among the agencies and to incorporate perceptions and preferences of the end-users. Further, vithe sual potential of the scenic resources are yet to be included in the general land use polices and development programs. Therefore, it is necessary to address the visual landscapes through landscape preferences studies in the regional contexts and at different levels and landscape scales as well.

The experience of the travellers, traversing in the landscape, is affected by the presence of existing land uses or changes brought about in the land use patterns, landforms, water and built forms (Sell et al 1987; Zube 1975; 1987); other factors like the civic components such as care and cleanliness, safety and spatial qualities are also explored in different studies (Stamps Arthur 2009; Nassauer 1995).

2.7.6   Urbanization Affects Preferences

Population density and urbanization affect landscape preferences. Brown (2006) referred to them as 'development preferences' in his study. There is an increase in the rate of suburbanization and growth of urban population observed in India. When the residential area shifts outward from an inner city, it is called suburbanization. Especially in India, the suburbanization has created new points of concentration from the downtown. Hence, there has been a change in the land utilization in the nearby rural countryside as well. The emerging automobile-driven culture of Indian population has ushered in an access of up to 50 km or more, due to improving roadways and access to cheap automobiles. This has now led to alterations in

the landscape character and components observed in the traversed landscapes as well. In this case, the studies on the existing components and their preference values strengthen the attitudes towards preserving natural landscape components that are threatened by the ongoing developmental pressures.

2.8　　　INTERNATIONAL SCENARIOS

During the renaissance period, Italian architect Leon Alberti (1485), especially in his 'Ten books of Architecture' wrote that the 'roads should be made' rich with pleasant 'scenery' (cited by Parsons et al 1998). On the same lines of thought, two American Landscape Architects, F.L. Olmstead and Calvert Vaux, had designed wide grassy central medians along the roads and developed the concept of parkways for the commons in the US. The landscapes observed along a travelling route have the potential to be a rich visual resource and would enhance the experience of the travellers who are moving towards a tourist destination through landscapes of various types that are well recognized.

Contrary to the Indian scenario, issues and concerns of the landscape perceived were brought to notice and addressed by various scholars in the developed European and American countries. The National Environmental Policy Act (NEPA, 1969) of the US initiated the Environmental Impact Assessments (EIA) owing to negative impacts of developmental activities. It further included effects on the scenic and amenity resources as well (Lucas 1995; Burton Litton 1979; Susan Konica 1979; Stamps Arthur 1999; Zube1987; Palmer 2000).

Landscape and visual assessments are considered as an essential environmental management tool and have been in use since the 1970s, internationally (Guidelines for Landscape and Visual Impact Assessment,

2002;, Ode Åsa et al 2008; Otero et al 2007). These concerns have been due to increasing pressure for change in the landscapes and equally growing need to protect the landscapes with high scenic qualities that are observed to be diminishing. In addition, the task of assessing, designating and protecting the character and qualities of the landscapes are also through institutionalized programs such as the Countryside Commissions' Area of Outstanding Natural Beauty (AONB), Special Landscape Area (SLA) of UK (Alister Scott and Anna Bullen 2004), International Union Conservation of Natural Resources (IUCN) and so on.

Colin Price et al (1978) have reported that the visual experience of the landscapes is comparable to that of any commodity or services consumed by the end-users and can be equated to a resource. These resources have been referred to as 'visual resources' that cannot be substantiated on quantitative, economic terms (Price 2000; Collins 1999). Zube et al (1975) have considered it as a qualitative 'intangible resource' in landscape research point of view whereas Gunn, C.A., in his various publications (1979; 1994; 1998) has addressed it as an 'attraction' in the tourism planning perspective.

On a similar note, the roadside landscape attractions and their qualities are considered crucial for travel and tourism. So, the travellers' perception and preferences as to what makes an attraction, has a vital role in landscape as well as tourism planning (Gunn1979; Prentice and Beeho Alison 1996; Prantice 1997; David Eby and Lisa Molnar2000).

The perceived landscapes on roads, as a part or as a whole, in various forms and functions enrich the travel experiences of the travellers (Brain Goodey 1972). Further, they facilitate the phenomenon of "Tourist Gaze" (Urry 2002) or "travel glance" (Larson 2001) of the present, modern motor 'touring tourists' (Gunn 1979) and day-to-day travellers.

2.9　　　THE OBSERVERS, THE OBSERVED AND JUDGMENTS

All landscape studies consist of an object and a subject, where the object is the observed landscape and the subject is the observer who judges the landscape. The observers could be experts, or a panel of experts, or a group of common observers like end-users, the general public (Unwin 1975). There are some arguments about the selection of observers / assessors for the perceived landscape studies. On the one hand, the experts believe that their landscape aesthetics and judgments are appropriate for being trained in the same. On the other hand, various academic scholars strongly recommend users' opinions as judgments (Appleton 1975) to authenticate the entire process of landscape assessment studies. However, it is widely established that perceptions and preferences of the end-users are critical for any landscape studies. It is for this reason that ideas on 'landscape' are purely a human associated construction.

2.10　　　ISSUES OF PREFERENCE STUDIES IN POLICY AND PLANNING DECISIONS

It is often incomprehensible when summarizing the various landscape preferences from such studies as are mentioned here. This is primarily due to wide variations in the sample sizes (Nsubj), landscape samples as stimuli (Nstim) explored in diverse geographical contexts, survey types and analytical tools and techniques and consequent diversity of result types.

In the past, the same has been noted by Turner (1975), stating that a lack precision and clarity in landscape evaluation techniques for their applications in planning. He has further suggested a planning classification of Scottish landscape resources from the land use consultants to facilitate better land use decisions and protection. So, several means and methods have been

evolved by landscape scholars since the 1970s, to identify landscape character, quality and rarity to guide development control decisions (George Deasy 1942; Ode Åsa et al 2008; Herring 2009; Scott 2002; William Blair 1979; Marjanne et al 2008). However, it has also been noted that the landscape preference studies are an integral part of land use planning and tourism planning decisions and thus they serves as a means to understand the values of the landscapes perceived by the 'landscape users' or the general public. Their agreements and disagreements among various demographic groups (like gender, age, education, and income groups) have been considered as a ready reference to guide and authenticate the planners' and designers' decisions.

Stamps Arthur (1999) has recommended Meta-Analysis as 'a way to use statistical principles to synthesize a collective finding across different experiments'. He has stated that "it extends the ability to calculate effects and their significance across many studies". Further, he has argued that Meta analysis has two advantages: one, planners and decision makers need to understand people's preferences for the visual aspects of environments on how well different demographic groups agree or disagree.

2.11 THEORETICAL DISCOURSES AND EXPERIMENTATION ON LANDSCAPE PREFERENCE PARADIGM

In the body of literature on landscape studies of perception, travel and tourism landscape studies are carried out with diverse focuses like the geographical location, tools and techniques, means and methods, various conceptual and theoretical underpinnings and objectives. After a thorough review, a few of the published works of various scholars relevant to landscape preference studies, some of which form the basis of this study, are presented below.

The cases are organized and briefed on the basis of objectives of the study and the geographical locations where the study were carried out, respondent- sample size, number of landscape samples (in various forms), survey methods, analytic tools and techniques, and a few significant literature findings.

2.11.1   Theoretical Discourses

The idea of landscape, right from its inception, in the field of geography has extended its scope from physical geography to cultural and human geography. Since then various scholars have engaged themselves in theoretical discourses on its content and potential as a subject of research. Further, the generic use of the term landscape has spilled over to various fields, importantly, environmental psychology and human ecology. Stewart and Kirby (1998) have noted that a space becomes place when a physical setting gets enriched with human meanings. They have further classified the paradigms of landscape evaluation as Expert Paradigm, Psycho-Social Paradigm, Cognitive Paradigm and Experiential Paradigm. So, studies pertaining to the paradigm of landscape assessment in particular have adopted a few theories directly or debated or evolved or suggested theories or methods to assess the observed landscapes, since then. Therefore, it may be inferred that landscape has a wider scope for an everlasting academic pursuit and experiments. A few of the practical observations and suggestions of some scholars are briefly discussed in the following pages.

2.11.1.1   Observed landscapes

Ode (2008) has observed that water component is a critical component in the concepts of landscape. Though sample scenes vary on the basis of site or geographical contexts, a few conceptual underpinnings such as

the components of water, vegetation, landform and built form are adopted in most studies (Eric Hyman 1981).

2.11.1.2   Landscape representation

Ode (2008) emphasises that for a given landscape feature, photographs are valid, practical and frequently used representations of landscapes. Eric Hyman (1981) has noted earlier that photographs are more realistic than drawings and but are however less realistic than field trips.

2.11.1.3   Observers

Environment preferences vary systematically with social and economical and political affiliations, and so in case of sample selection few suggested for a stratified sample, on the basis of user type expertise, personality,   age,   ethnic group, education and socio- economic status (Hyman1981) whereas random sampling is observed to be prevalent in several experiments (Zube 1980).

2.11.1.4   Responses acquired

Interviews and questionnaire surveys are the prevalent methods adopted in landscape preference studies. Interviews are adopted for a small sample size and questionnaire survey for a medium to larger sample size. In the questionnaire surveys open ended questions are suggested for detailed personal preferences and close-ended questionnaires for quick response from a medium or larger respondent samples are necessary

2.11.1.5   Required information

In the case of landscape preference studies basic data suggested like photographs, land-cover and land-use data, drawings or ortho-photos and field

observation are observed to be necessary to successfully carry out the study. In some cases subject employed photographs are also applied (Jacobsen 2007) in a controlled environment like parks and playgrounds. In some other cases landscape scenes as photographs were collected on a conceptually predefined landscape categories on the basis of its style (Simonic 2003) for preferences survey.

In summary, there are several approaches driven by theoretical underpinnings or direct geographical context that exist in the paradigm of landscape evaluation. A few cases that are in direct geographical contexts, around the globe, are fairly explained in brief further.

2.11.2   Cases and Their Findings

2.11.2.1 Familiarity significantly affects landscape type preferences

This study was carried out by Surova and Pinto (2008) in the Montado region of the southern Portugal. It has evergreen oak woodlands (Savannah Type) and landscape character. Objective of the study is to present and discus results of an empirical survey that pertains to consensus and divergence within user groups, in relation to their preferred Montado landscape type. Fourteen Landscape samples (Scenes) were chosen in the form of 10/15 cm colour computer edited photographs. The total sample size of 232, consisting of randomly selected nine groups such as workers (N = 26), hunters (N = 26), bee keepers (N = 29), mushroom-pickers (N =12), foreign tourist (N = 24), new rural inhabitants (N = 31), rural inhabitants (N = 28), urban dwellers from Lisbon (N = 28), land owners of Montado of Corkoak (N = 28). The response format of the interview survey has been with close-ended questions for preferences of landscape types and open ended questions for more information. The data analysed the preference for landscape type by

Frequency and Pearson's chi-square test using the demographic variables like gender, age, family income, family size, and education and user group.

Content analysis has been applied to data from open-ended questions and preferences then have been categorised into objective features (physical components) such as trees, vegetation, light, and shadow and subjective experiences connected with the observed landscape patterns. Photography method has been observed to be easy. The results have shown a divergence of preferences and content analysis on the responses to open-ended questions revealed preferences related to landscape characteristics such as nature, visibility, diversity, mystery, and tranquillity. Further findings indicate preferences for different landscape types and this does not depend on the demographic character of the respondents, like gender, age, family size, income, and education. These are insignificant because they have p-values above 0.05. On the other hand, familiarity has been an important factor for landscape experience.

2.11.2.2 Vegetation density decides landscape preferences

Dawn Hill and Daniel, (2008) have studied oak-pine woodlands of the mid-western US. They have stated that the preferences are very much engrained in human emotions and so public acceptance and support are necessary for ecological restoration goals. The objective of the study has been to determine whether or not the ecological messages affected perceptual judgements (rating) of landscape scenes. The total respondents of 182 subjects categorised into 6 experimental groups (ranging from 29 to 33 to a group) have responded to 45 landscape sample scenes. Two main factors, namely, the Scenic Beauty Dimension and Acceptance Dimension have been chosen. The data have then been statistically analysed, applying ANOVA, Principal Component Analysis (PCA) and correlations between scenic beauty and acceptance rating and tree density (open to very dense).

2.11.2.3   Built form development preferred in a landscape type

The case study by Morgan and Williams (1999) in 70 beaches in the Wales (UK) has had 66 participants, out of which 24 are coastal managers and 42 college students. Using Spearman rank correlation, they have ranked the beaches from 0 to 20. Multiple regression analysis has been used to test the relations between mean beach scores and selected parameters such as the number of people present, level of commercialization, prominent man-made structures, communication structures and cloud cover. The study has concluded with a note that the beaches with less man-made structures or builtform and less commercialised were preferred more.

2.11.2.4   Naturalness, water, relief and land use compatibility to predict landscape preferences

Perceived naturalness, water presence, topographic relief and land use compatibility are the important components of landscape preferences. In the past, Nassauer (1979) has strongly argued that the naturalness of landscape types as powerful predictor of visual preferences and has observed that agricultural landscapes provide a special sense of naturalness. Citing his own study conducted in 1978, he reveals that four landscape character types have been presented as 82 slides which are sorted and categorised by landscape architects, geologists and agronomists on a 7-point scale. In the experiment, the naturalness, waters' presence, topographic relief and landuse compability have been tested and found as predictor variables for landscape preferences. Similarly, Olmo and Muñoz. (2004) have found that water as an element of landscape preferred by the public while developing landscape guidelines for periurban, territory of Murcia in S. East Spain

2.11.2.5 Indicated proximity to natural environment play an important role for residents to reside in the urban fringe

The objective of the study, conducted by Kaplan and Maureen (2004), is to identify the preferences for nature adjacent to homes of residents in their residential neighbourhoods in the urban fringe of S. Eastern Michigan in Hamburg, USA. Method of survey has been through mailed photo questionnaire with open-ended questions: 1) if you describe your residential neighbourhood to your friend what 4 to 5 things, would you want to be surely mentioned? 2) Indicate how well the six natural features characterize the residents natural surroundings, using 5-point rating scale (1 for not at all and 5 for not very well), and 3) which of the 10 natural features described the view from their house? The data collected have then been analyzed by applying multiple item-component factor analysis and the findings indicate that proximity to the natural environment plays an important role for residents to reside in the urban fringe.

2.11.2.6 Landscape style and wild gardens are more preferred

Simonic and Tanja (2003) has also explored the preference of perceived naturalness of the landscapes. The objective of the study is to explore the preferences and perceived naturalness, judgements for a selection of natural, naturalistic and geometrically designed landscape scenes. The landscape samples constitute three broad categories: 1) natural landscapes; 2) naturalistic landscapes; and 3) geometrical landscapes, where 'natural landscapes' are naturally growing plants, multilayered vegetation, partly or entirely with the water's edge. 'Naturalistic landscapes' resemble nature that is generated by design approach and syntax. 'Naturalistic landscapes' are further divided into 6 types, namely, landscape style, picturesque, wild garden, park land, abstract and biotope. The third category is of 'geometrical landscapes' that has highly regular plant arrangement, an orthogonal design.

The respondents consist of 550 households, who have been surveyed by mailed questionnaires. In all 214, questionnaires have been returned (39 % Male and 59 % Female) with an average age of 44.3 years and the age range is 14-84 years. The study has 2 factors: 1) preference judgement; and 2) perceived naturalness rated on a 5- point scale. Differences between preference and perceived naturalness are defined in the questionnaire. Further, 7 predictor variables, namely, coherence, legibility, degree of maintenance (cue for care), complexity, mystery for further information, familiarity, and perceived spatial diversity (space component) have also been judged. The first three variables help in the process of sense making. The participants scored all 21 landscape scenes in terms of preference and perceived landscapes which are analysed using cluster analysis. The results have shown that the naturalistic landscapes are more preferred than geometrical, partly also more preferred than natural. Landscape style and wild gardens are also preferred while natural and biotope scenes are less preferred. The geometrical scenes have scored the least of all variables. Natural and biotope landscape types are perceived to be more natural.

2.11.2.7 Perfect linear relationship between scenic beauty (SB) and contingent valuation (Willingness to Pay - WTP)

To examine the relationship between scenic beauty (SB) in economic terms (willingness to pay) as a photo based survey of 11 camp ground sites, located in four national forests in Northern Arizona, Daniel et al. (1989) have conducted an important study, with the respondent samples consisting of two experimental groups: one group of 707 samples for Contingent Valuation and another of 757 samples for Scenic Beauty evaluation. Landscape samples scenes in the form of 35 photo sets have been used in the study. The findings have shown nearly perfect linear relationship between scenic beauty (SB) and contingent valuation (WTP). The study has

proved that the aesthetic beauty of the landscape is valued in economic terms as well.

2.11.2.8 Nature dominated traversed landscapes have high potential for stress recovery

A study by Parsons et al (1998) has the basic hypothesis that people psychologically recover from stress, watching environment dominant by natural vegetation than the artefact-dominated (built form) of urban landscape type. The objective of the study has been to examine explicitly that the road environment acts as a function to stress recovery. Landscape samples chosen have been that of four video tapped simulated drives in different landscapes, with 160 participant samples. The human physiological parameters of autonomic activity, that is indicative of stress - rising blood pressure and electro-dermal activity; and somatic activity that indicates great negativity and rising EMG, have been measured and supported by the hypothesis that people have psychologically recovered from stress by watching environments dominated by natural vegetation than the artefact (built form) dominated urban landscapes. The authors have cited from many studies that confirm traffic, the road advertisements, traffic signals and signs account for a large percentage of motorist's eye fixation.

2.11.2.9 Safety, facilities and scenic beauty are preferred on traversed landscapes

According to Sezen and Sevgi (2010), the "roads are among the most effective landscape elements which can construct relationship between human beings and nature." Citing earlier works of Dearden (1981) and Eby and Molnar (2002), they have found road safety, scenic beauty and presence of facility such as hotels, motels and camping areas as significant features. The participants of a sample included 34 females and 76 males. The method

applied includes the questionnaire survey and ranking of the routes of the State Highways E-97 and D-925 of Turkey.

2.11.2.10 Imageability of urban landscapes as paths, edges, nodes, landmarks and districts

Collective images have been used in comparing different ethnic and social groups' mental maps of a city and in tracing the developmental sequence of spatial images in children of different ages. Lynch and others (1960) did pioneering work for comparison of urban images, but their sample size of respondents was small and not selected primarily to represent social or ethnic differences within the city. His major thrust was on the "imageability" of the cities and observed paths, edges, nodes, landmarks and district images carried on by observers of the road.

2.11.2.11 Preference for no development is closely associated with wilderness, therapeutic and intrinsic landscapes

To present a method for measuring and analysing tourism development and residential development options, Brown (2006) has worked on the Kangaroo Island of South Australia, using the survey research technique that spatially locate public perceive development landscape values and development and preference. He has used place/landscape values as predictors of tourism and residents' development preferences. The one thousand respondents have been randomly selected from voter registration rolls. Of the total 1,000 participants, only 431 responses have been usable for analysis. Participants have been asked to place mnemonically coded stickers, dots, representing predefined landscape values and dots representing three types of development preferences on a map provided with the survey package.

Major findings of the study have been that tourism development preferences are closely associated with recreation, economic and scenic landscape values, whereas residents' development preferences are closely associated with recreation, economic and landing values. Preference for no development closely is associated with wilderness, therapeutic and intrinsic landscapes. He has further identified landscape/place value as predictors of no development preferences.

2.11.2.12 Preferences for roadside and lake shore factors and the perceived impact development

Kearney et al (2008) has studied the public perception of the scenic resources to address the concerns of the Tahoe's regional authority (Tahoe Regional Planning Authority). The chosen case study has been located in the Lake Tahoe basin, California, near Nevada border. A total of 392 participants consisting of 144 tourists, 129 local environmentalist groups and 119 property owners who have been further categorised on the basis of age, education, gender, retirement, and occupation have been studied. The participants have responded to photo questionnaires, with structured and open-ended questions on 30 Lake Shore scenes and 12 roadside scenes rating each scene on a 5-point scale. The acquired data have been analysed using principal component factor analysis for the two sets of scenes. With the criteria of eigen value greater than or equal to 1, with a cut of value factor equal to 0.50, multivariate analysis of variance (MANOVA) has been applied to explore preferential differences among the sub-population for roadside and lake shore factor. Software package, SPSS has been used to find the relation between identified group differences in preferences for roadside factor, for lake shore factor and perceived impact development.

2.11.2.13 Movement enhances the process of perceiving environment

To understand how the movements within landscapes enhance the process of perceiving environmental features, Heft and Nasar (2000) have hypothetically experimented with dynamic and static displays that are applied in most of the preference studies' ratings. The landscape scene samples are the static displays chosen from 23 video footages, using Panasonic PV-70 Digital, 52 mm lens. With a small respondent sample size of 51 participants, half of whom have been assigned to rate epistemic variable condition and other half participating in the evaluation of variable conditions. The two sets of depended variables are measured on a 5-point scale. Though it is found that ratings are higher for statistic displays, however, ratings for dynamic displays have a strong correlation with a wider range of variables. Further, rating for epistemic variables have a higher range for dynamic displays then static displays. Epistemic variables are to explore further on the unpredictability to learn more whereas the evaluation variables have explored the preference comfort and curiosity. The findings show that the dynamic versus the static displays are rated as significantly higher (3.38) than static displays (2.89) on the epistemic variables by using ANOVA.

2.11.2.14 Vegetation in development pattern preferred in urban fringes

The study by Sullivan and Sarah (2005) examines the extent to which local citizens prefer various development patterns for a roadway corridor at the fringe of a medium-sized community. The research question that they have taken to solve is; can change in a design of commercial setting or the addition of natural features improve the visual quality of a roadway at the rural–urban fringe? The case study chosen is a portion of route 45 at east-central Illinois – between Champaign – Urbana and a rural area of Champaign County. The method used is the photo-questionnaire method with 36 black and white photographs of 2 mile stretch with four base images (existing,

altered by development) and 32 composite images developed by computer simulations for 11 different proposed conditions. Out of the four images, they have created 36 images. Eleven conditions fit in to 3 classes (1 - typical development, 2 - developments with trees, and 3 – natural additions). The images have been rated on a 5-point scale where 1 is for low preference and 5 indicates a high preference. From the purchased, mailing list, they have selected 1000 individuals randomly and mailed a copy of the photo questionnaire each, out of which 16 questionnaires could not be delivered. Out of the 984 delivered questionnaires, only 396 returned (40.2 %). The result has shown that citizens preferred base images over typical development class, development with trees and natural additional class earn higher rating base images. It has been found that nature plays an important role in the aesthetics of developed settings; trees in particular can be used to improve visual quality. So the study has implications for design of roadways and commercial development at the fringe.

2.11.2.15 Landform, visual diversity and water are related to scenic value

The study by Zube and others conducted in 1970 has reviewed and discussed a number of landscape perception studies to assess the utility of the assumptions. Review of a number of relatively discrete studies relating to the testing of some of the assumptions has also been carried out. They have further analysed the multi-variant study employing simulation and field experience. The 307 respondents have been distributed into 13 groups (each group ranging from 11 to 33 respondents) that are again broadly categorised as: 1) On-field study sub-groups (123), and 2) Non-field study sub-groups (184). The respondents have been asked to describe and evaluate eight sample scenes using the techniques of 1) semantic scales and a landscape feature check list (18 features, on a 7-point semantic scale), 2) Q-sort technique

sorting 56 photographs into 7 scenic quality categories (7 piles) distributed as 3-7-11-14-11-7-3. 3) rank order of 8 panoramic photographs of Suffield according to the scenic quality, and 4) evaluating scenic quality and preference for recreational, residential and travel use, for each of the 9 landscape sections. The landscape types are rated on a 5-point scale with 4 questions on preference to reside, recreate, and travel use and scenic landscapes. Data are analysed using two-way ANOVA. A modest relationship among the 4 questions averaging the correlations across all 9 vistas has yielded values ranging from 0.56 to 0.62. The basic findings are that when landform becomes more ragged the scenic resource value increases. When land use diversity and land use edge increase, the scenic resource value decreases. Height contrast is positively related to scenic value. If water area or water edge increases, the scenic resources value also increases. Length of the view also increases the value of scenic resources. Finally, concluding from the regression analyses of the previous studies, the authors suggest that better prediction may be possible if attention is given to stratifying landscape on the basis of the scale of the view area and/or on the extent of naturalism or of the impact of man.

In view of the above theoretical discourse, cases on landscape preference studies in association with the background issues related to perceived visual landscapes in Indian context and around the globe, a conceptual framework is evolved to carry out the current study.

2.12 CONCEPTUAL FRAMEWORK FOR THE CURRENT RESEARCH

The concept of visual environment, especially the 'landscape' engages both the object and the subject (Jurae Kamicaityte Virbasiene and Janusaitis 2004; Unwin 1975) where the object being the landscape, as a whole as type and its physical component parts (Croft 1975) such as

vegetation, landform, water and built structures whereas the subject would broadly refer to the landscape observers or landscape users or the society in general. It is also widely argued that the visual 'environment perceived' or the perceived visual 'landscape' cannot be assessed without the subject, who is the ultimate observer and an assessor as well. As stated by Paul Selman (2006), "it is people's perceptions that turn land into landscape." Hence, by and large, landscape preference studies are predominantly oriented towards the subjects or the observers of landscape than limiting to the measure of physical dimensions of the landscape instead.

On the same line, Craik and Zube (1976), in their analogy of landscape assessment studies, have referred to it as 'person-centric assessments' and 'place-centric assessments'. Lothian (1999) has also referred to it as subjectivist or objectivist concept of (landscape) beauty, in his article on, "Landscape and the philosophy of aesthetics: Is landscape quality inherent in the landscape or in the eye of the beholder? The same article has further elaborated, on the changing philosophies and concepts of beauty from classical to the contemporary period.

Emma Stewart and Val Kirby (1998) have identified four basic landscape evaluation paradigms, namely, Expert, Psycho-social, Cognitive and Experiential paradigms. All landscape studies would fit in any of the above mentioned four paradigms, and the authors have further suggested that the experiential paradigm is the finest among the four. The reason being that experiential paradigm (Psychophysical approach) focuses equally on the settings and the observers' experiences rather than the interpretive media (psycho-social paradigm) or the learning process (cognitive paradigm).

Several landscape preference models exist in the literature in combination with various approaches and techniques. The psychophysical approach is strongly emphasized by Zube (1987) on his theoretical model of

human and landscape interactions - a 'transactional concept' (Figure 2.1). Transactional concept is still valued for its potential to authenticate landscape preferences.

In line with the above, perceived values are obtained from subject responses as a mediating variable that varies due to experiences, needs and desires, and utility or functional use of the landscape for a person. On the same line of thinking, the current study examines the landscape preferences as a resultant of landscape experiences, of the travelers on roads on the basis of the landscape type and selected landscape components observed along the transport corridors.

On a traveling circuit, the travelers' sources of attraction include the roadside scenic areas, outstanding natural areas and water touring areas, which are visually accessed on road landscapes. As Gunn (1997: p. 45) has stated in his book on 'vacationscape,' that "the automobile initiated another major change, enabling travelers to reach thousands more attractions along roadsides rather than merely at steam boat and railway terminal." This reinforces the importance of traversed landscape experiences on roads as potential attractions to travelers, in the modern automobile-driven society that includes the tourists and locals as well.

Landscape as an attraction, in order to comprehend the complex dimensionality of the total landscape to some degree of 'reduction,' is inescapable, for practical reasons and to mediate with the common landscape users. It would also facilitate sustainable planning and management through policy strategies at different levels (Selman 2006). This has also been noted earlier by Zube (1980: p. 134) stating that the 'taxonomies are important in the design of instruments and procedures for evaluating the existing environment.'

Further the components are classified into 'universally' acclaimed primary landscape components - Vegetation, Landform, Water, Built Form - which are physical, civic and spatial components, which in turn are perceptual. They are derived from earlier literature, and locally observed secondary landscape components derived from existing land uses and landform patterns of the area of study in focus. It is also on the basis of second landscape unit as 'landscape character type' which is the character observed. As a result, composition of the observed physical components along the corridor is also studied. Conceptual framework for the study is as follows:

- The first principal assumption underlying this study is that landscape preferences are determined from both the 'universally' and 'locally' derived components (aspects) of landscapes.

- The second assumption is that preference values are also affected by the various character of the regional landscapes, referred to in the study as 'landscape character types.' These are determined by one or more predominant components besides the composed components in total.
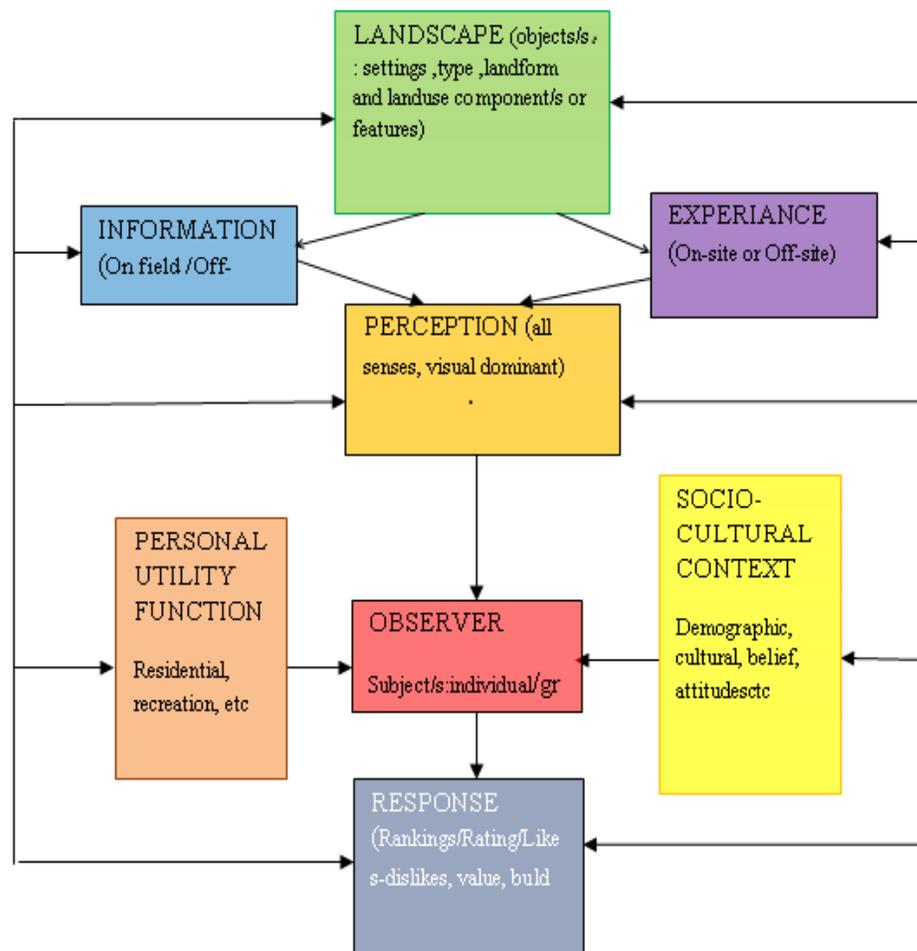
Source: Based on Zube, E.H. 1987

Figure 2.1 Transactional model

2.12.1   Landscape Components

In this study, the 'universally' derived landscape aspects are referred to as primary components, which are the physical components (Vegetation, Water, Landform and Built Forms) and two perceptual components (civic and space related components). The primary components are universally recognized aspects that their presence or absence affects landscape preferences. On the contrary, 'locally' derived secondary

components are site specific. These secondary components are brought under the primary components. So, for instance water is 'universally' accepted as determinant of landscape preferences in most of the studies (Ode and Asa et al 2008). The same water components can be in the form of river, lake, ponds, sea that may be represented in the site, locally. So, preference can work on 'universally' derived components as well as 'locally' derived components. Likewise, locally determined components of preferences are the manifestation of more general 'universal' aspects in the local contexts.

2.12.2 Landscape Character Types

Landscape characterization serves as a way of identifying a landscape unit that can be measured with respect to various parameters: on the basis of composition of the physical landscape components present on the site or perceptual components such as wilderness, fear, legibility, naturalness, and cue for care. However, this study would restrict to basic parameters such as civilities and spatial quality that are exhibited as well. Nonetheless, by and large, the landscape character types between destinations (tourist centers and urban centers) are determined by the composition of the physical landscape components. For instance, larger percentage of built form in a given area (density) universally understood to indicate urban character (Brown 2008). The predominant landform components such as the hills, undulating or flat land, and water components such as the sea, river and lakes form the sum total or the composite character such as the urban, hilly, and coastal landscapes or urban, undulating river fronts or rural, forested hilly or coastal urban landscapes. Therefore, similar to landscape components, landscape character types serve as landscape units to measure, in correspondence with the end users consensus, their preferences, and level of agreements or disagreements.

It is necessary to note that a majority of the existing conceptual frameworks, by and large, strives for linear and unidirectional flow for operability and reasonable practicality. Nevertheless, elements of the conceptual framework and the 'relationships' being looked into are neither linear nor unidirectional (Zube 1987: p. 49) and so they are to a large extent iterative and interactive with each other in various degrees. So, the process of evaluation and design of framework are to start with any of these elements of the framework, keeping the needs, objectives and goals in place (Zube 2003).

The conceptual framework for the present study is illustrated in Figure 3.2. It has two core features for analysis: the landscape and the landscape users, tourists or travellers. The core features are identified and processed in congruence with the research questions and statement of the problem of the study. This framework consists of landscape components and landscape character types, and in other words the landscape variables (detailed in Chapter III and Chapter IV). The demographic variables are the socio- demographic characteristics of the groups of respondents, who are road travellers with a few associated variables such as familiarity, long time place association (city, town or village) and their responses as values (detailed in Chapter IV).

2.13   SUMMARY

This literature review has addressed the core landscape, perception and tourism paradigms and their interactions. It has discussed a few theories and relevant cases to strengthen the study. Its relevance to traversed landscapes and the implications for tourism and land use planning are discussed.

In view of the above literature review, this study has drawn inspiration from the transactional concepts (Zube 1987) to justify human and landscape interactions, component approaches to landscape evaluation (Crofts 1975), to split the whole landscape into component parts (or landscape units) and identifying the components that can be derived 'universally' by earlier findings and 'locally' by site-pertinent observations. Further, it has characterized landscape types on the basis of composition of predominant components as a measurable landscape unit. Responses from the participants obtained by applying photo-questionnaire survey methods, mostly ranking and rating as responses and SPSS 17 and EXCEL as data analysis tools and their statistical techniques (descriptive, chi-square, ANOVA, and demographic correlation and mean rank scores) are explained.

The landscapes are categorised on the basis of vistas that are characterized as urban – plain (Chennai City Center to Porur); suburban-plain (Porur to Sriperumpudur); rural-plain (Sriperumpudur to Kancheepuram); rural - plain (Kancheepuram–Chengalpattu); rural – hilly (Chengalpattu-Mamallapuram); and coastal semi-rural (Mamallapuram-Chennai), the detailed descriptions are discussed in Chapter V and are analysed further in the same chapter.
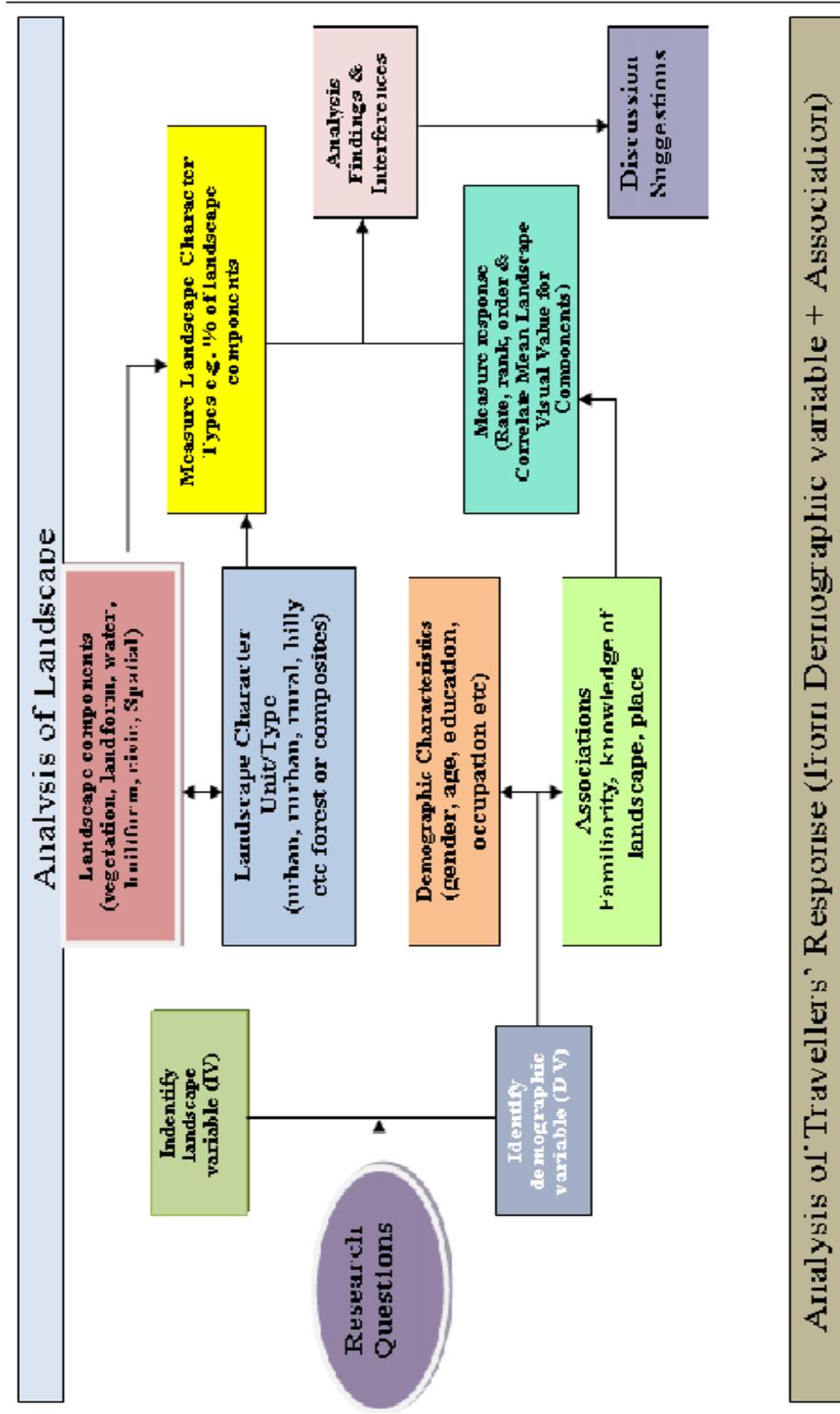
Figure 2.2 Conceptual Framework