DEVELOPMENT OF VIRTUAL TOUR FOR EDUCATIONAL HERITAGE HUBS ESTABLISHED BY HIS HIGHNESS MAHARAJA SAYAJIRAO GAEKWAD-III IN CENTRAL CITY, VADODARA

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Chapter One

Introduction

CHAPTER I

INTRODUCTION

Educational Heritage of India

India has a rich tradition of education right from antiquity. Education has always been given great prominence in Indian society since the times of the Vedic civilization with Gurukuls and Ashram being the centres of learning and with evolving times a large number of centres of learning were established across ancient India.

According to Mark Taiwan (1896),

> "India is the cradle of the human race the birthplace of human speech, the mother of history, grandmother of Legends and the great grandmother of tradition. Our most valuable and most instructive material in the history of a man that is measured up in India only".

Education in India is not a recent origin. The people of India had great reverence and love for education. Since the first appearance in authentic history, the people of India have enjoyed the reputation of being a learned man. India is home to numerous ancient universities spread across the length and breadths like Takshila University, Nalanda University, Mithila University, Telhara University, Sharada Peeth Temple University, Vallabhi University, Puspagiri University, Odantapuri University, Vikramshila University, Sompura University, Bikrampur University, Morena Golden Triangle University, Kanthalloor Sala University, Jagaddala University and Nadia University. Students across the world came and studied in these learning centres. These ancient universities were considered as a place of historical sanctity, the seat of Vedic learning, a place of religion comprised of several temples and architecture masterpieces enveloped by a lofty wall and a huge gate, educational and residential buildings, compounds, stupas, classroom, library complex with most sacred manuscripts, meditation halls, parks and lake adorned the institution's grounds. This unique characteristic of these universities to accommodate multiple discourses under one roof seemed to be

the most attractive feature which tempted knowledge seekers from various parts of the world.[1]

In the medieval period, the Muslim rulers established Maktab and Madrassah. Wherein, the main objective of the Maktab education was to teach children to read and write Arabic scripts and especially to read the Holy Quran. During this period, some of the rulers from different dynasties like Mohammad Ghauri, Ultamash, Razia, Balban, Ghiyasuddin, Muhammad Tughlaq, Firoz Shah and Akbar encouraged and contributed much to the growth of Muslim education in India **(Denny, 2014).**

During the British Period, 1765-1813, the East India Company which came to India for trade became a ruling political power after the battle of Plassey in 1757 and Grant of Diwani in 1765 and therefore education in native India became a legal responsibility for the EIC. In the beginning, the company had no interest in educating the native Indians because they were more interested in making a profit from the expansion of the company's activities, the number of English officers increased and the education of their children became necessary to train Indian people for minor clerical jobs of the company. Thirdly, it became very important to train some Indians to helps them in the interpretation of Hindu and Muslim Law. They started some schools and college in India **(Kochhar, S.K.,1984).**

After independence, a considerable change in the political, social, economic structure of the country took place, throwing greater responsibilities and challenges before the universities to provide leadership, guidance and qualified personnel in various fields of national reconstruction. The academic problem assumed new shapes and universities had the wider conception of duties and responsibilities before them. They had to meet the growing demand for every type of higher learning-literary and scientific, technical and professional. It began to be realized that universities in an independent India must play a fuller role in nation-building and enable the country to attain freedom for want, disease and ignorance in the shortest possible time, by the application of the knowledge of science and technology in the development in various direction. Some of the main event in the sphere of university education during the post-independence period was the appointment of the University

Education Commission in 1949, the establishment of the University Grants Commission in 1953 and the passing of UGC Act in March 1956 by parliament and establishment of several national laboratories and other institution of higher technical and Engineering Education. Out of these events, the appointment of the University Education Commission is regarded as an epoch-making event **(Sharma, K. A, 2013).**

This Journey of the education system in India is endowed with the richest and the most diverse stock of religious, cultural, educational and architectural heritage structures, monuments and buildings amongst which a significant proportion of them are protected and declared as World Heritage Monuments by UNESCO, approximately 3,650 monuments are in the custody of Archaeological Survey of India (ASI) declared as monuments of national importance. Some of them are in the custody of religious endowments, archaeology departments under state governments. Those heritage structures which are unprotected and do not come under any formal system due to lack of infrastructure and funds are protected mainly by the intervention of non-governmental organisations **(Menon. A, 2014).**

India being a captivating centre for religious and cultural educational hub fascinates many inbound and outbound tourist to visit these heritage destinations. Apart from religious and cultural education, people are also fascinated by the indigenous crafts and artistries of India. Therefore, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life is essential. Planned promotional activity plays a significant role to attract tourists to heritage destinations. Many developed and developing countries have successfully adopted profile-raising concepts and tools to promote and attract tourists to heritage destination in their countries amongst which virtual tours have proven to be game-changers.

Significance of Virtual Tours in Exhibiting Educational Heritage

A virtual tour is comprised of the sequence of panoramic images that are 'stitched together using computer software to create a 'virtual experience, through various sensing devices, which users can use according to their feeling. The virtual tours are customer-centric marketing and promotion

method which have revolutionized the way of presenting and promoting the heritage sites. These virtual tours offer scholars, students and visitors unprecedented access to the architectural, historical, geographical, archaeological, and anthropological data that maximize visitors' engagements, offering the modern visitors, a chance to virtually visit a place before making their final decision. These technologies provide an interesting and attractive channel through which it is possible to educate or inform a wide audience about historic artefacts or sites to assist audiences in visiting sites that are difficult to access in real life.[2]

According to 'The Wrong Stuff' (1982),

> "A virtual tour is a simulation of an existing location, usually composed of a sequence of videos or still images. It may also use other multimedia elements such as sound effects, music, narration, and text. It is distinguished from the use of live television to affect tele-tourism".

According to Cho. et al., (2002),

> "A virtual tour is the experience in the virtual environment using a computer-mediated environment and is based upon the concept of telepresence"

According to Alan B. Craig (2015),

> "Virtual tours are a medium, a means by which humans can share ideas and experiences"

Ever since the virtual tour and augmented reality technologies became feasible options, there has been great interest in using these technologies to represent, restore and reconstruct cultural, religious or educational heritage. Inserting information into a virtual environment has created entertaining and interactive experiences for users, and consequently, these technologies are becoming increasingly common, given their appeal to users and the endless possibilities on offer. [3,4]

A virtual tour consists of a panoramic photography application that allows users to interact with the panorama, for example, rotating it in all directions, from the floor to the ceiling, to go from one room to another, to zoom on the image, etc. Additionally, multimedia information and hyperlinks are also incorporated to provide more in-depth information so that the final presentation

is enriched. The virtual tour allows the users to appreciate heritage assets with an immersive experience. People who cannot travel due to any reason can still enjoy the same experience in a safe and protected environment. Virtual Tour offers professional tour operator and commercial advertisers of heritage destinations, a unique opportunity to promote their presentations, websites and online marketing messages directly to the prospective audience. A high-quality virtual tour impresses the viewer deeply and keeps them on the website for a long time which is a key factor to gain new customers and retain old customers. Virtual tours are a smart marketing strategy. They decrease cost because product demonstration could be done without personal meetings, expensive presentations, in different time zones, without extra travel cost. The virtual tour works 24/7 and enhances the value of the destination through its Internet presence which ultimately increases revenue by turning website hits into real-life customers **(Dawson P. C, et.al. 2018).**

In the last few decades, studies have researched into the application of Information and Communication Technologies (ICT) to promote and market historical sites **(Monod & Klein, 2005; Styliaras, Koukopoulos & Lazarinis, 2010; Hermon & Kalisperis, 2011; Ott & Pozzi, 2011; Rogerio-Candelera, 2014),** with special attention given to educational and architectural heritage and urban spaces. Recently, with the development of spatial simulation and visualization tools for spaces that cannot be accessed easily, several applications have focused on studying immersive and realistic forms of communication, which provide public access to the contents of the heritage site. Among these applications, virtual tours have been widely used in the field of heritage site and monuments. For example, virtual museum applications have been developed **(Styliania, Fotisb, Kostasa, & Petrosa, 2009; Miguélez Fernández, 2013; Reffat & Nofal,2013),** which offers the opportunity of exploring a remote site by manipulating fragile precious objects with no risk of damaging them. Virtual tours of archaeological sites are also developed, where reconstructing damaged structures or remains allows users to gain a realistic overall vision of the ancient buildings **(e.g., Rodrigues, Magalhaes, Moura, & Chalmers, 2008; Ercek, Viviers, & Warzée, 2010; Guidi, Russo, & Angheleddu, 2014).**

Keeping this perspective in mind, the present study makes an effort to develop a virtual tour for the educational heritage hub established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara to promote this heritage destination in the nation and across the globe.

Local of the Study

Vadodara is the third-largest city of Gujarat state. The railway line and NH8 that connect Delhi and Mumbai pass through Vadodara. Vadodara is named after the banyan tree, 'Vat Patrak' which took root 2,200 years ago in a settlement on the banks of river Vishwamitri blessed by venerated sage Vishwamitra **(Yak, A. 2021).** The archaeological finding proves that there was human habitation here from prehistoric times. Vadodara has a rich historical background. Vadodara has passed through the hands of the imperial Guptas, Chalukyas, Rashtrakutras, Solankis, Sultans of Delhi, the Mughals and finally the Marathas **(Chandra, K.K., 2012**).

The greatest period in the Maratha rule of Vadodara started with the accession of His Highness Maharaja Sayajirao Gaekwad-III in 1875. It was an era of great progress and constructive achievements in all fields. Vadodara owes its grandeur to Maharaja Sayajirao Gaekwad-III (1875-1939 AD), a great ruler, a social-economic reformed, a patron of arts, architecture and music. It was the dream of this able administrator to make Vadodara an educational, industrial and commercial hub. His Highness Maharaja Sayajirao Gaekwad-III was one of the foremost administrators and reformers of his times. He initiated a series of bold socio-economic reforms, started several model industries to encourage initiative like model textile and tile factories. As a result of his policy of educational and industrial development, today Vadodara is one of the most important centres of education, textile, chemical and oil industries.[5]

His Highness Maharaja Sayajirao Gaekwad-III also introduced several social reforms. In 1917, after getting the first law on compulsory primary education in India passed by the Bombay legislative council, among the princely state, H.H. Maharaja Sayajirao Gaekwad-III was the first to pass an Act for Compulsory education of boys from age 7-12 and girls from age 7-10 in 1906. He not only boldly introduced compulsory primary education but also a library movement to augment the adult education scheme. It was he who visualised a

general scheme of development in all branches of knowledge at different stages, with The Maharaja Sayajirao University of Baroda at the apex. Vadodara owes its beauty, its educational institutions and its masterpieces of architecture to the insight and vision of this great ruler, His Highness Maharaja Sayajirao Gaekwad-III **(Chaube, B & Khedkar, P.,2019)**.

Vadodara is also known as "Sanskari Nagari" means a cultured city. Wherein, the culture of the city is not just history or heritage; it is dynamic, ever-changing and alive. Vadodara has welcomed a wide variety of people from all over India and also from all over the world. To portray Vadodara as a 'Sanskari Nagari", The Maharaja Sayajirao University of Baroda has played a significant role where students across the globe come to study, which add to the flavour of cosmopolitan to the city. Today, due to its great legacy, Vadodara occupies a unique position on the educational, cultural and industrial map of India.[6]

However, the present study aims to develop a virtual tour for the Educational Hub established by His Highness Maharaja Sayajirao Gaekwad-III in the Central City, Vadodara during his era, namely;

1. **Stree Adhyapan Pathshala (1882):** Stree Adhyapan Path Shala is located next to Lal court, nearby Sursagar Lake. It was built in 1882 to train female teachers for primary and secondary schools. It is said to be one of its kind of college in early time. Stree Adhyapan Pathshala was also started for developing skills in reading, writing, and household accounts to such women are who did not attend school.

2. **Faculty of Performing Arts (1886):** The Sangeet Shala was assimilated in The Maharaja Sayajirao University of Baroda as the college of Indian Music, Dance and Dramatics, as a part of the Faculty of Fine Arts, in 1949. After this, in 1950 the degree course in music along with four more disciplines viz. Vocal, Tabla, Sitar, Violin and Dilruba. Finally, in the year1986, it was granted the status of separate faculty, after which it came to be known as the Faculty of Performing Arts.

3. **Maharani Chimnabai Nyay Mandir (1896):** The Maharaja held immense respect for his late Maharani who passed only after a few years of their marriage. Used for musical concerts and lecture in its early days and later converted to the court, the building came to be known as the "Maharani

Chimnabai Nyay Mandir." Being the Supreme Court pre-independence, it came to be an important building and was used to deliver a lecture by eminent people such as Baba Sahad Ambedkar, Aurobindo Ghosh and Patrick Geddes as well.

4. **Maharani Chimnabai Stree Udyogalay (1934):** One of the major steps Maharani Chimnabai took in the direction was the establishment of a professional training institute called Shree Chimnabai Stree Udyogalaya. The idea of setting up a vocational institute was in the mind of the queen even since her visit abroad in 1909. During her tour, she visited and examined many institutes working for the welfare of women. Upon coming back, she formed a committee to collect the necessary funds and do the research required to establish the institute. Finally, in the year 1914, after acquiring sufficient funds, the institute started with 3 students at the Lallu Bahadur's haveli near Mandvi Gate.

5. **Maharani Chimnabai Kanya Vidhyalaya (1916):** Maharani Kanya Vidhyalaya one of the most well-reputed schools in Gujarat managed by Kelavani Trust, Vadodara. Maharani Kanya Vidhyalay earlier was Marathi and Gujarati medium school. A few years ago, Marathi medium was closed down and English Medium Education was started in the building. Maharani Kanya Vidhyalaya located at Sursagar Lake. The purpose of starting school was to provide an opportunity of studying for the survivors of the Baroda state employees and tribal girls.

6. **Maharani Chimnabai Kanya Chhatralaya (1930):** Maharani Chimnabai (1872-23 August 1958), also known as Chimnabai II, was the second wife of Maharaja Sayajirao Gaekwad. She was a progressive woman, who worked toward education for girls, abolishing the purdah system and child marriage, and she also became the first president of the All-India Women's Conference (AIWC) in 1927. Maharani Chimnabai girl's hostel was established in 1916 to provide an opportunity to the survivors of the Baroda state employees and tribal girls to stay or study. The trust was formed in 1958 and till now the trust has been managed by the hostel. This hostel provides accommodation and meals for students of 9th to 12th standard. Currently, 150 students are taking advantage of this hostel.[7]

Justification

India has a rich tradition of education right from ancient times. Education has always been given prodigious importance in Indian society. Since the times of the Vedic Civilization with Gurukuls and Ashram being the centres of learning and with evolving times, a large number of centres of learning were established across ancient India. India being a country of religious and cultural diversity, is endowed with the richest and the most diverse stock of religious, cultural, educational and architectural heritage structures.

The educational heritage, both tangible and intangible, represents value systems, beliefs, traditions and lifestyles of society which is being transmitted from one generation to another. This fascinates many inbound and outbound tourist and knowledge seekers to visit these heritage destinations. Thus, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life is indispensable.

Vadodara, formerly also known as Baroda, is the third-largest city in the Indian state of Gujarat ruled by the Marathas. It is also known as the "Sayaji Nagri" named after its ruler, His Highness Maharaja Sayajirao Gaekwad-III. It is also known as "Sanskari Nagari", the City of Culture, reference to its status as the Cultural Capital of Gujarat.

The golden period in the Maratha rule of Baroda started with the accession of His Highness Maharaja Sayajirao Gaekwad-III in 1875. It was an era of great progress and constructive achievements in all fields. His Highness Maharaja Sayajirao Gaekwad-III, who ruled from 1875 to 1939, did much to modernize Baroda, establishing compulsory primary education, a library system, a university, and model textile and tile factories, which helped to create Baroda's image as a modern education as well as an industrial hub. Amongst his great initiatives of socio-economic reforms one the most significant was education. Various educational hubs were established by His Highness Maharaja Sayajirao Gaekwad-III in the central Vadodara city during his era namely; Stree Adhyapan Pathshala, (1882), Performing Arts Faculty (1886), Maharani Chimnabai Nyay Mandir (1896), Maharani Chimnabai Stree Udyogalay (1934), Maharani Chimnabai Kanya Vidhyalaya (1916), Maharani

Chimnabai Kanya Chhatralaya (1916). These educational structures have a great legacy of more the 80 years. Undesirably the history of these treasure troves has lost in the chaos of city life.

Strategic promotional activity plays a significant role in promoting heritage destinations amongst which virtual tour is one of the latest technologies adopted by the heritage destination managers. A virtual tour is a simulation of an existing location that is composed of sequencing images developed from photographic-based media or panoramas that have an unbroken view. It may also use other multimedia elements such as sound effects, music, narration, and text. It is based on the potential to create virtual experiences that tourists can accept as a substitute for a genuine visit to the heritage destination. The use of virtual tour as a promotion tool can help bring new visitors to the historical destination and may enhance the tourist experience by providing resulting increased demand for the destination.

Keeping this perspective in mind to promote and to tell the history of the educational heritage hub established by His Highness Maharaja Sayajirao Gaekwad-III present study aimed to develop a Virtual Tour of Educational Heritage Hub established by His Highness Maharaja Sayajirao Gaekwad-III in Central city, Vadodara.

During the review of literature, the researcher has come across various studies conducted abroad focusing on the significance of virtual tours in the promotion of heritage destination such as "Educational Tourism Through a Virtual Reality Platform" (Mario Martínez Zarzuela, 2013), "Virtual Tour Tool for Enhancing Destination Marketing" (Moturi, et.al, 2014), "Virtual Reality - Shows A New Vision For Tourism And Heritage" (José Paulo, et.al 2015), "Personalized Real-Time Virtual Tours in Places with Cultural Interest" (Emmanouilet. al, 2018), "Virtual Reality for cultural heritage tourism" (Edina et.al, 2018), "Comparing Virtual Reality Tourism to Real-Life Experience: Effects of Presence and Engagement on Attitude and Enjoyment" (Michael,2018), "Virtual Tours For Smart Cities: A Comparative Photogrammetric Approach For Locating Hot-Spots In Spherical Panoramas"

(R. Feriozzi,2019), "The impact of virtual reality technology on tourists' experience"(Rosario, 2020).

While reviewing the researches done in India, the studies were found on "Virtual Tourism and its prospects for Assam" (Rahman and Bhowal, 2017**),** "A study on the effectiveness of google virtual tour on business promotions" (J. S, R,2017**),** "Campus virtual tour of Mumbai, India" (Bakare et.al, 2017), "Virtual Tourism - the concept of VR technology acting as a tool to provide a new dimension of sightseeing" (Shaikh et. al,2018), "A study on the potential benefits of applying virtual reality in travel and tourism for better destination image" (Jayendran et.al, 2018), "Virtual Reality: A marketing approach for tourism destination" (Indu. et.al, 2018).

Whereas, reviewing studies conducted in the field of Family and Community Resource Management studies have been carried out on "Services provided by tours and travel agency: A study of consumer satisfaction" (Mehta, 2002), "A study on knowledge of youth regarding eco-tourism" (Pandya, 2009), "Tour and travel agencies: a study on the extent of utilization, problems and satisfaction experienced by tourists" (Jani, 2013), "Assessment of tourist satisfaction regarding heritage walk and interpretation methods developed for a selected religious heritage destination in, Gujarat" (Tailor,2017).

However, during the review of literature, a dearth was felt for studies with special reference to the development of virtual tours for the promotion of educational heritages. Since Vadodara, then was known as Baroda state, beholds the history of compulsory primary education introduces by His Highness Maharaja Sayajirao Gaekwad-III in 1893 and It has many educational heritages established across Vadodara. Therefore, it was thought that the present study will be distinctive and will contribute to showcase the legacy of educational heritage hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara. **The developed virtual tour will be free of cost for the users. The copyright of the developed virtual tour shall remain with the Department of Family and Community Resource Management, Faculty of Family and Community Science, The Maharaja Sayajirao University of Baroda, Vadodara.**

The study will also enhance the literature on educational heritage tourism. It will be also useful to the tour operators and heritage destination managers by providing a deeper understanding of the significance of virtual tour in the presentation and promotion of heritage destinations. The study will benefit the Department of Family and Community Resource Management and other academic institutes offering courses like Travel and Tourism, Destination Management, Travel Agency and Tour Operations at the graduate and postgraduate level in strengthening knowledge, curriculum and its application to the practical respective field. This study will provide feedback to tour operators in Vadodara city, as they can use the concept of developed virtual tour and interpretation and promote other significant destinations of Vadodara and enhance the customer experience taking part in Vadodara Darshan. It can also be considered as a guideline in developing other virtual tours for educational and cultural heritage destination.

Statement of the problem:

To developed Virtual Tour for Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara and to assess the extent of satisfaction experienced by the student users studying Travel and Tourism subjects.

Objectives:
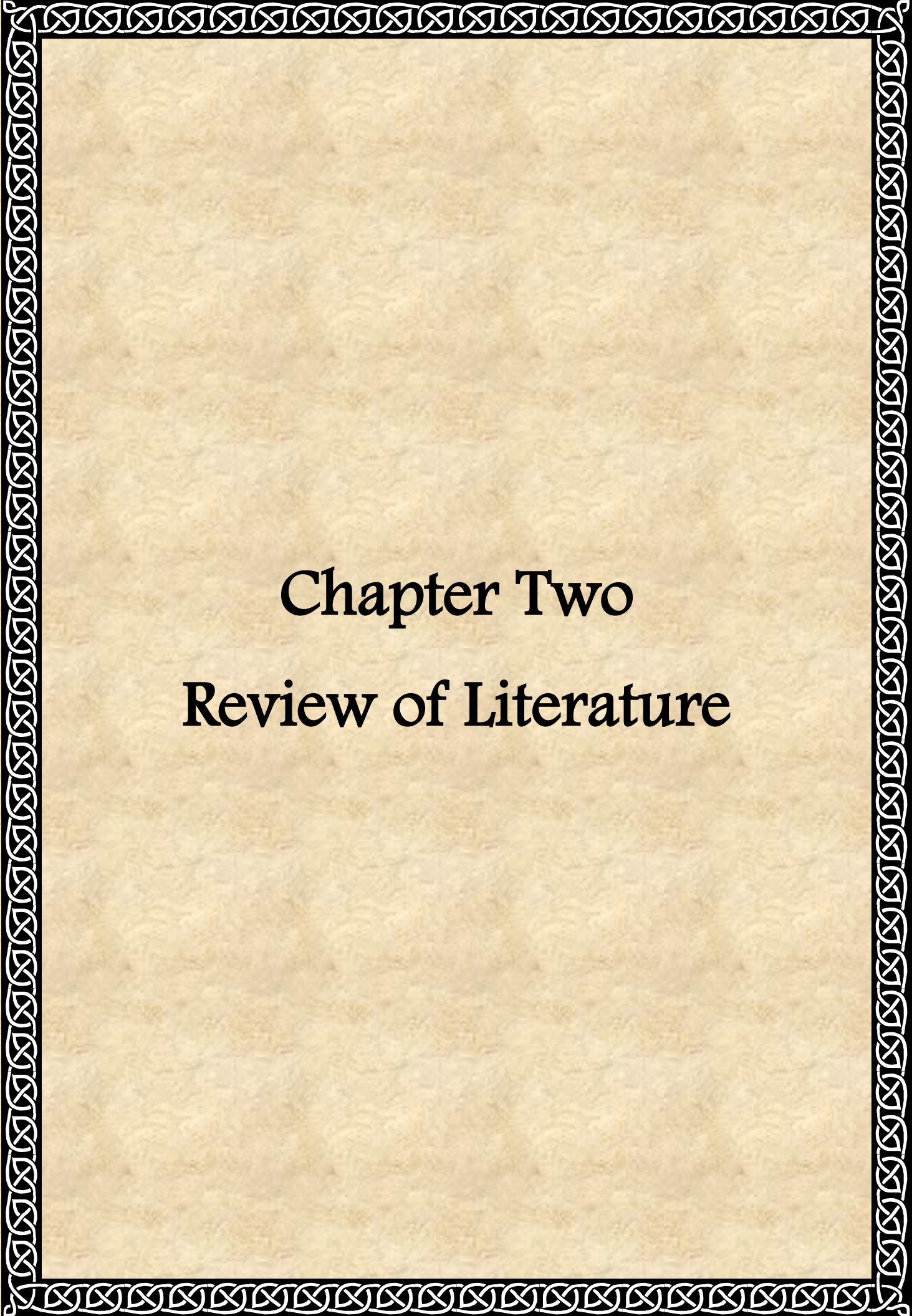
1. To collect and synthesize information regarding selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in the Central City, Vadodara.

2. To develop a virtual tour for the selected Educational Heritage Hubs, established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

3. To assess the extent of satisfaction experienced by the users' regarding the selected aspects of virtual tour developed for the Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

Delimitation of the study:

1. The present study was limited to the selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara namely;

      i. Stree Adhyapan Pathshala (Estd.1882)
     ii. Faculty of Performing Arts (Estd.1886)
    iii. Maharani Chimnabai Nyay Mandir (Estd.1896)
     iv. Maharani Chimnabai Stree Udyogalay (Estd.1934)
      v. Maharani Chimnabai Kanya Vidyalaya (Estd.1916)
     vi. Maharani Chimnabai Kanya Chhatralaya (Estd.1916)

2. The present study was limited to users who were above 19 years of age, could understand the English language and be studying Travel and Tourism subjects and willingly participated in the study.

3. The present study was limited to the users who were having smart gadget through which they participated in the developed virtual tour.

Hypotheses of the study

1. There exists a variation in the extent of users' satisfaction regarding Virtual Tour developed for the selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara, Gujarat with their selected personal and situational variables.

Chapter Two

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

A review of literature is an account of the work done on the topic by accredited scholars and researchers. It is a condensed version of an exhaustive literature survey of technical writings and data from previous journals, articles, books, papers, and other researchers, giving insight into the work done in the same area as that of the present study. Hence, a thorough review of the literature was undertaken to get familiarized with the prior work done in the area of the selected research topic. This exercise is fruitful in systematic planning for the execution of the present study. The chapter is presented under two heads viz. Theoretical Orientation followed with Related Researches.

2.1: Theoretical Orientation

2.1.1: History of the Education System in India.

2.1.2: His Highness Maharaja Sayajirao Gaekwad–III: An Education Reformer.

2.1.3: Educational Hubs Established by The Gaekwad's in Vadodara.

2.1.4: Significance of Virtual Tourism in Promoting Heritages.

2.2: Related Researches:

2.2.1: Research Studies in India

2.2.2: Research Studies in Abroad

2.3: Conclusion of Review of Literature

2.1 Theoretical Orientation:

2.1.1: History of Education System in India

2.1.1.1: Education in Ancient India

Education in ancient India has always been believed to be very disciplined and well-organized since 3rd Century B.C., when traditional and religious knowledge used to be the main subject of learning. The basic institution of education in Vedic age was the Gurukul. Before the Gurukul no reference for existence of any educational Centre or institution have been traced in literature of education. The Gurukul, the residence of the teacher was the most significant Centre of learning in ancient India. This unique institution was a very vital part of the Vedic community for several centuries. The entire progress achieved by Indians throughout the ages in various fields of life and knowledge is the fruit of the Gurukul system of education and training, where teaching was done orally by sages and scholars. In course of time the scholars use to codify the orally transmitted instructions of his teacher. This difference led the growth of some Sakha, Charana, Gotras, and Pariṣats. Further, during the Vedic, Brahmanic and Upanisadic age, these Sakha, Charana, Gotra, and Parisat helped greatly in the expansion of education (**Mukherjee,1969)**.

The famous teachers attracted the students and, in the post Vedic period Pariṣats developed as the association of teachers and students. The students from different parts of the country regularly attend these Pariṣats for advanced learning and gradually it established into popular and developed as an important seat of learning. Along with this some other educational colonies were also developed like different types of temples, Agrahara and Chatuspathi. Famous teachers attracted student from all over India to these places. These corporate colonies of teachers and student were like ancient Indian Universities (**Sharma. R.& Sharma R., 2012).**

Ancient Indian education system needs to be understood as being the ultimate outcome of the Indian theory of knowledge and as part of the corresponding

scheme of life and values. The ancient Indian education Centres from the point of view of their importance and hoariness as described by **Nath.S. (2016)**, is presented here:

Gurukul:

In ancient time Gurukul was the most important of Centre of learning. In the Vedic literature references of numerous teachers (Acharya) and the students (Shishya) is articulated. The Atharvaveda and the Satapatha Brahmaṇa gives the graphic picture of the initiated student entrance to the preceptor's residential institution, and the primary injunctions are recorded therein. In Chandogya Upanishads it is mentioned that the Brahmacharins residing in the Gurukulas are called 'kulavāsi', one who dwells in the house of his preceptor. The great epics like Rāmāyaṇa and the Mahabharata also give the references of Gurukuls. **(F.E, Keay,1942)**.

Parisat:

The next Centre of learning in ancient period was Pariṣats. Generally, for spreading education these Parisats were developed or constituted. During the Samhita, Brahmana, Upanishads and in the Sutra period these Pariṣats helped great deal in the expansion of education. These Pariṣats were also called 'assembly of learned' (Vidvat Sabha). Learned scholars for the improvement of their knowledge regularly searched such types of Pariṣat. In the Upanishad these Pariṣats has been used for the assembly of the learned and the wise persons where great philosophical and spiritual problems were discussed and solved. In fact, Pariṣats was group of various Charaṇas for the purpose of discussion on tough educational, philosophical problems and evolving new facts **(F.E, Keay,1942)**.

Temple Colleges:

The temple Colleges played a very important role in education. The early history is difficult to trace. However, inscriptional records indicate that these types of colleges started from the tenth century A.D. The name of some temple colleges

was Saltogi temple college, Ennayiram temple college, Tirumukkudal temple college, Tiruvorraiyūr temple college. These temple colleges were the residential colleges providing free boarding and lodging and were famous Centre of learning in tenth century A.D. These temple colleges functioned in a spacious hall specially built for the purpose for accommodating a large number of students. The local villagers also used to give endowment to the development of these temple colleges. Education was imparted by teacher in free of cost **(F.E, Keay,1942)**.

Agrahara :

The donation of land to the learned Brahmaṇas from the kingdom is called Agrahara. In those Agrahara the learned Brahmaṇas imparted education as teachers. Being pleased the king donated land to the Brahmaṇas for the development of his country. Upon those donated lands, the learned Brahmaṇas generally used to establish institutions for imparting education, where students could study their subjects. In those institutions or respective Agrahara the domiciled Brahmaṇas were learned in Vedas, Purans, Logic, and Administrative Science. Therefore, they taught those subjects to the students without taking any fees. Gradually these Agrahara turned in to the institutions called Toll for imparting higher education **(Altekar, A.S. 2009).**

Chatuspathi Tol :

In the Sutra period a special type of school came in to existence namely Sutra schools. This Sutra school subsequently developed as Chatuspathi wherein all students were eligible for education. But in majority of the case the teacher and students both were exclusively Brahmins. The Chatuṣpathi provided specialized courses. Grammar, Kalpa, Purana, and Philosophy were generally offered as fields of specialization. There were three types of Tols. Subjects offered in the first type were Vyakarana, Kavya and Puraṇa. Those of second type were Kalpa and Puraṇa. In the third type were offered philosophy and Nyaya. Like that of Agrahāra, these Tol use to provide primary education for children. In the beginning of 19th century Chatuṣpathi Tol were found large numbers in Bengal. Now days these Tols

are in existence all over India. In present days the management of the Tols are now run by Government **(Agarwal, V.S.1942).**

Buddhist Vihara or Monastery :

In ancient times the Buddhist Monastery, then known as 'Vihara' played a very important role in Indian life and thought. The word Vihara means the dwelling place especially for the Monks. This Vihara gradually turned in the institutes of higher learning. During the life time of Buddha these Vihara of the Monks were in vogue. Numerous Pali text and the epigraphically records shows that Viharas came in to existence in a very early period. During the earlier period the Bhikṣus generally used to live by the side of the tree root in the forest and gradually some Viharas were established for Bhiksus. Gradually, these Monasteries or Vihāras were transformed in to educational institution. Some of the famous Monastic Centres or Viharas of Buddhist period are Takshila, Nalanda, Valabhi, Vikramsila Mahavihara, Odantapuri Mahavihara and Jagaddala Mahavihara. Subsequently, Nalanda and Takshila developed into universities of international importance. Since then, these universities were the epitome of knowledge and the most preferred destinations for both domestic and foreign scholars for knowledge sharing and learning purposes **(Nath, 2016).**

Takshila University:

From time immemorial Takshila had been an important Centre of learning in ancient India. Takshila had originated in the Brahmanic era and existed till the Buddhist era. It had functioned as a link between the two systems of education. It was situated about twenty miles away of Rawalpindi. It was the metropolis of Gandhara province located in Pakistan. Sanskrit linguist and grammarian Panini; physician, Charaka; philosopher, economist, jurist, and royal advisor Chanakya; author Vishnu Sharma; Maurya Emperor Chandragupta, etc. were the product of this learning Centre **(Das.S. K, 1996).** This corroborates the antiquity of Takshila University to be over 3600 years old. Around 60 Subjects were taught over there consisting of the Vedas, Vedanta, Vyakarana, Ayurveda, Surgery, eighteen Craft

(Sippas), Military education, Astronomy, Agriculture, Commerce, Politics, and more. Over 10,500 students from across Aryavart and from places as far as Greece, Arabia, and China studied in this university **(Mookerjee, R.K. 2011).**

Nalanda University:

Nalanda Vihara was the largest Buddhist Monastic University in ancient India. The fame and glory of Nalanda go beyond in ancient India. Nalanda was a typical Buddhist University. It was situated in forty miles away of Patna and seven miles north of Rajgṛiha in Bihar. In the beginning Nalanda was a small village. By the fourth century A.D, it became educationally important and for the next three centuries, it remained at the highest point. The two important Buddhist persons named Nagarjuna and his disciple Arya Deva, lived at Nalanda which indicates the importance of the place for growing up **(F.E, Keay,1942).** It was a principal seat of learning, attracting students from Tibet, China, Greece, and Persia and beyond until the Turkish Invasion of 1193. It attracted Buddhist monks, as it was the birthplace of Gautam Buddha's favorite disciple Sariputta. There were three methods of teaching: verbal and explanatory, lectures and debates, and discussion. The university accommodated over 10,000 students and 2,000 teachers. Subjects taught were Mahayana Buddhism, the Vedas, Logic, etc. Nalanda had a very huge library called Dharmaganja (Mart of Religion). This library had three departments known as "Ratna-Sagara" (Ocean of Jewels), "Ratnaodadhi" (Sea of Jewels) and "Ratnaranjaka" (Jewel adorned). The library had large collections of manuscripts on various subjects in various languages **(Bokil, V.P.,1925).**

Vallabhi University:

Valabhi was another famous Buddhist Monastic University. In the seventh century A.D, Valabhi had achieved paramount educational importance. Valabhi was the rival to the University of Nalanda. The University generally provided education in Hinayana Buddhism. It was situated in Saurastra in Western India. The place is identical with Wala state. It was the capital of Maitraka kings during the period of

475-775 A.D83 **(Dutta,2015).** This Centre was renowned for religious tolerance and mental freedom. After the destruction of it in the 8th century, imparting education continued on a small scale (after repairs) for the next few hundred years. Valabhi provided education in Hinayana Buddhism, Arthasastra, Law, Politics, Varta, Theology, Chikitsasastra and Accountancy **(Altekar.,1944).**

Vikramshila University:

The Vikramsila was founded by King Dharmapala in the eighth century A.D. in Bhagalpur, Bihar. Like Nalanda the buildings of Vikramsila was also constructed in a very well-planned way. The whole Vihara was enclosed on all sides by strong wall. There were one hundred and eight temples, six college buildings, a central hall called the House of science and free broad Hostels. There was also a large quadrangle which could accommodate an assembly of eight thousand persons. These colleges' buildings were so beautiful that all the outer wall of Monastery was adorned with the beautiful paintings. In its front wall was adorned with beautiful paintings of Nagarjuna*,* once the head of the Nalanda Monastery. The other walls of the Monastery were also adorned with the paintings of the famous teacher's images, who earned fame for learning and character. This university attracted students from its own country as well as foreign nations. Subjects taught at Vikramshila University included Logic, Philosophy, Vyakarana, and Tantra Shastra which was the main subject that attracted and influenced more students (**Rawat. P. L.,1963).**

Odantapuri University:

Another Buddhist Monastic University was Odantapuri. It was the contemporary of Vikramsila University. During the decline period of Nalanda, the Odantapuri was established by certain Lokpala. It was located near the Pataliputra in Magadha. Odantapuri basically spread the tenets of Buddhism. It was famous for its strong hold of Tanric Buddhism. Many Tibetan eminent scholars came to Odantapuri to learn something new in Tantrism. It had a very splendid library of Brahmanical and

Buddhist work. There were not less than one thousand Buddhist monks and students resided at Odantapuri and received education **(Das, S.C.1942)**

Jagaddala University :

Jagaddala was the last glory of Buddhism in ancient Bengal. It was founded in the city of Ramavati on the banks of Gangas and the Karatoya in the country of Varendra. The historical work Ramacarita also gives us description of Varendra and its capital Ramavati and mentions its great Jagaddala Monastery. Jagddala University became a resort of scholars of Tantric Buddhism. At the time of Ramapala it became a great Centre of learning. And for a period of hundred years this University remained famous Centre of Buddhist education. It has a very good library. Students from distant parts of the country regularly visit Jagddala University for education. Many students from Tibet come to Jagddala to translate Sanskrit works. It was noted for its teachers as Mahapaṇḍitas, Upadhyayas and Acaryas **(Das.S. K,1969).**

Mithila University:

Mithila has existed since the time of Raja Janak, the father of Sita. They taught literature, fine arts, sciences, and scriptures including the Vedas, Nyaya Shastra, etc. Indian mathematician and philosopher Gangesha Upadhyaya founded a school of new Logic (Navya-Navya) at the site where he wrote Tattva Chintamani. Two subjects that later gained prominence in Mithila University was Nyaya (jurisprudence) and Tarka Shastra (Logic). The examination was tough and students received degrees only after they cleared the Salaka-Pariksha **(Barua.D., 1996).**

Telhara University:

Telhara the ancient learning Centre is located at Telhara, 40 km from Nalanda University in Bihar. It dates back to the Kushana period, which corroborates it to be 3000 years older than Nalanda. It was destroyed and set on fire by Bakhtiyar

Khilji during the same time when he destroyed Nalanda University, i.e., in 1193 CE **(Sharma. R. & Sharma R., 2012).**

Sharada Peeth Temple University:

Sharda Peeth Temple, one of the oldest temples of Kashmir is amongst those holy sites which are equally respected by the people beyond the religions and borders. Located in the isolated village of Sharda in Neelum Valley in Azad Jammu & Kashmir. It was built on the right bank of Madhumatti stream and therefore, Sharda Temple has been dedicated to the goddess Sharda Devi, which is the supreme divinity by Hindu community, while other communities consider it as an important component of their common cultural heritage and glory of their land from ancient times. Hence, Kashmir has also been known as Shardha Peeth. The religious centre was not only the worship places but also the centres of learning and Spirituality. History clearly indicates that Sharda civilization had a very deep impact on the lives and culture of the Kashmiris where the new philosophical approaches of Hinduism or Brahmanism were developed while Kashmiri architecture got contemporary innovation there**.** The Sharda script developed by the Kashmiri scholars in the 8th century was widely spoken and written in different parts of India. The fame of Sharda Peeth as a Centre of learning had spread over a vast stretch of land and scholars from the neighboring countries use to travel to Sharda for spiritual gratification **(Ghani, 2009)**.

Pushpagiri University:

Pushpagiri, a very ancient Indian University-perhaps one of the oldest Buddhist establishment in the world while is spread across Cuttack and Jajpur district, Odisha (ancient Kalinga) in 3rd century ad, flourished until the 11th century in India. Today, its ruins lie atop the langudi hills, low hills about 90 km from the Mahanadi delta, in the Jajpur and Cuttack district in Odisha. The actual campus, spread across three hilltops viz; Lalitgiri, Ratnagiri, and Udayagiri, contained several stupas, monasteries, temples, and sculptures in the architectural style of the Guptas' period. The Puphagiri establishment witnessed a phenomenal growth in

religion, art and architecture till the twelfth century A.D. It played a significant role in disseminating Buddhist culture and religion forming itself, like Nalanda, an important religious and philosophical academy, to which flocked the entrants and scholars to take lessons from the intellectual stalwarts of Buddhism. "In this vihara were kept three sets of Mahayana and Hinayana sastra. There were eight great groups of dharma and 500 monks. Puphagiri ranks as one of the primary institutions of higher learning in ancient India, along with Nalanda, Vikramshila and Taksahila Universities **(Altekar,1944).**

Somapura University:

Somapura, the great Monastery, was a renowned intellectual centre until the 12th century. Its layout perfectly adapted to its religious function; this monastery-city represents a unique artistic achievement. Geographically located to the north-west of Bangladesh in the district of Naogaon, the heart-land of ancient "Varendra", close to the village of Paharpur the extensive ruins of the Buddhist monastic complex are the most spectacular and important pre-Islamic monument in Bangladesh. The first builder of the monastery was Dharmapala Vikramshila (770-810AD), the king of Varendri-Magadha, as inscribed on a clay seal discovered in the monastery compound. The plan of the monastery can be described as a large square quadrangle measuring approximately 920 feet, with the main entrance, an elaborate structure, on the northern side. The outer walls of the monastery are formed by rows of cells that face inwards toward the main shrine in the centre of the courtyard. In the last building phases of the Monastery these cells, which formed the outer wall, totalled 177. The main central shrine has a cruciform ground plan and a terraced superstructure that rises in three terraces above ground level to a height of about 70 feet. The intermediate terrace is a wide circumambulatory path which passes four main mandapas architectural plan, it is in fact a simple cruciform that has been elaborated with a series of projections at the re-entrants, a form that is copied at all levels on the main shrine. At the intermediate level there were originally two bands of terracotta plaques running around the full perimeter of the shrine, out of which half are still preserved in situ (**Rawat. P. L., 1963).**

Bikrampur University:

Bikrampur is a situated 12 miles south of Dhaka, the modern capital city of Bangladesh. It lies in the Munshigonj District of Bangladesh. The region is famous for its early Buddhist scholarship & in the later period for its cultural influences. This pristine site is the habitats to the remains of the temple and city thought to be 1,000 years old established by Dharmapala Vikramshila in the late 7ᵗʰ century at Munshi Ganj in Bengal, which is presently Bangladesh. University attracts students from the country and foreign countries. The centre taught a wide range of students with special importance to Buddhist education. During the 11ᵗʰ century, the centre attracted around 8,000 students, both local and foreigners **(Sharma. R. & Sharma R.,2012).**

Morena Golden Triangle University:

The Golden triangle temples of Morena were constructed in the 8th to 12th centuries AD during the Gurjara-Pratihara Dynasty. The city of Morena was a hub of University education once upon a time. These legacies were lost in the string of time but have now been restored and are one of the most beautiful complexes of temples in Madhya Pradesh. An inscription found in the Chausath Yogini Temple in Mitawali mentions Mitawali, Padavali, and Bateshwar temples as a Golden Triangle within which a famous university existed. These three places in Morena hosted a learning Centre for different subjects **(Rawat. P. L., 1963).**

Kanthalloor Shala University:

Valiyasala in Thiruvananthapuram of Kerala is home to Kanthalloor Sala- one of the most famous universities of India. It dates back to the 9th to 12th century. Located within the premise of a group of temples, Kanthalloor Sala University taught sixty-four different subjects including atheism. The education centre was known for following strict education and discipline **(Sharma. R. & Sharma R., 2012).**

Nadia University:

Nadia was a famous centre of higher learning in ancient India and continued to be so even during the medieval era. Nadia was founded as a capital by one of the Sena (Lakshnan) Kings in 1063 A.D. or 1106 A.D. Nadia is the popular name of Navadwipa on the Bhagirathi at its confluence with Jalangi. Its rise to renown dates from circa A. D. 1063 or A.D. 1106 when King Lakshmana Sena of Gauda made it his capital. Because of its sanctity and political importance, it attracted a large number of scholars who taught the Brahmanical learning to thousands of students. The Court of Lakshmana Sena (A.D. 1106-1138) became a great centre of learning. His Prime Minister was the famous Halayudha. The University possessed three chief centres of learning at Navadwipa, Santipura, and Gopalpara, patronised by the Maharaja of Nadia. Navadwipa alone collected 1,100 students and 150 teachers. In the time of Raja Rudra of A.D. 1680, the number of students was 4,000 and teachers 600. The classes at Nadia were held in Tols. Each Tol consisted of a thatched chamber and a collection of mud huts. The number of students in a Tol was usually about 25. The main subjects were Vyakarana, Politics and Law. There were several other renowned men of letters in different subjects, who built up the reputation of Nadia as a seat of learning. There was the poet, Jayadeva, the author of immortal "Gita Govinda", a masterpiece of literature of any age. There was the poet, Dhoyi, the author of "Pavanaduta". There was a third distinguished poet Umapati, of whom it is stated that he made "Language to sprout into luxuriant foliage". The severe subjects of Law found its exponent in Sulapani, author of the important work "Smriti-Viveka" **(David. K., 1992).**

2.1.1.2: Education during the British Period

Efforts of the East India Company (1765 – 1813)

The EIC which came for trade to India became a ruling political power after the battle of Plassey in 1757 and Grant of Diwani in 1765 and therefore the responsibility of education in native India became a legal responsibility for the EIC. In the beginning, the company had no interest in educating the native Indians

because they were more interested in making profits from their trade and expanding their empire. But it became necessary to educate British officers' children as well as train Indian people for minor clerical jobs of the company. Also, it became very important to train some Indians to help them in the interpretation of Hindu and Muslim Laws. Therefore, schools and colleges in India were started. Christian missionaries who came to look after the spiritual welfare of the English people working here also took part in educating the Indians **(Kaur, K.,1985).**

Efforts of British Parliament (1813-1653)

In 1813 the Charter Act paved the way for (1) the missionary to go to India to work in the Indian territories of EIC for the education of the Indians and (2) The EIC to accept the responsibility for the education of Indians on the Doctrines of secularism and conservatism **(Kaur, K., 1985).**

The Policy of Education under the British Rule (1854-1900)

The Charter Act of the Company was renewed after every 20 years. Hence in 1853, a committee of stable select House of Commons was set up to enquire into the progress of education in India and eventually led to the emanation of Wood's Dispatch in 1854, which was a new era in the history of Indian Education and can be rightly called 'the Magna Carta of Indian Education. It laid the foundation of our present system of education. After 1854, the Indianization of education took place; Universities were established in Calcutta, Bombay, and Madras in 1857; secondary education achieved a marked level of progress. Lord Ripon, the Viceroy of India, appointed the first Indian Education Commission on February 3, 1882, under the chairmanship of William Hunter which made a far-sighted recommendation. It witnessed a rapid growth of private schools and colleges run by Indians from 1880-1900. At the same time, private enterprises were the most important agency for spreading Western. Education among the people marked the rapid westernization of the educational system along with the Indianization of its agencies **(Kaur, K., 1985).**

Rise of the Spirit of Nationalism (1901-1920)

In 1901, Lord Curzon convened a conference of the Director of Public Instruction known as the Shimla Conference. On 27th January 1902, the University Commission was appointed by Lord Curzon to reorganize and strengthen the existing system of education. Gopal Krishna Gokhale, who was a member of the Imperial Legislative Council, introduced a Bill free for compulsory primary education. But the Bill was rejected by the Imperial Legislative Council. Though he failed, he obtained support and as a result, in 1910, the Indian National Congress and the Muslim League passed a resolution in favor of free and compulsory primary education. As a result, the Government reviewed its policy. Again, the resolution on Educational Policy of 1913 was the formulation policy on Secondary and University Education. The need for educational research was acknowledged for the first time in the Government Resolution on Educational Policy in 1913. But due to the great world war (1914-1918), it remained only a document of historical importance **(Rawat, P. L., 1991).**

An Era of Educational Reforms 1921-37

Along with the increase of Institutions the enrollment of students was constantly on the increase. The appointment of the Hartog Committee which submitted its report in September 1929 and the appointment of A. Abbott and S.H. Wood in 1937, to advise the government on problems of some educational reorganization and particularly on the problems of Vocational education brought a drastic change in the system of education in India **(David. W., 1994).**

A Decade of Provincial Autonomy (1937-1947)

Various schemes exploratory, executive, and experimental in nature were undertaken. Moreover, certain bold experiments such as the Wardha Scheme of Basic Education were also undertaken. The years 1946 and 1947 were dominated by intense political agitation. The Central Advisory Board of Education (CABE of 1944) submitted a report on educational development in India known as the Sargent Report that recommended universal, compulsory, and free primary

education for all children between the ages of 6 to 14. As the Britishers left, education became the responsibility of independent India **(Sehgal. M., 2018)**.

2.1.1.3: Education after the Independence of India

Despite the opportunity, many problems were there in the field of education. Therefore, several commissions and committees were appointed to review and recommend education policy. The 1st was the University Education Commission (1948), under the Chairmanship of Dr. Radhakrishnan, reporting on Indian University education, and suggesting improvement and extension for present and future requirements of the Country **(Rawat, P. L,.1991).**

The creation of the University Grants Commission and the appointment of the Secondary Education Commission (1952-1953) were two important recommendations and implementations were made. For quality improvement of secondary education, a committee was appointed under the chairmanship of Dr. Tara Chand, the Educational Advisor. From 1950, five-year plans dealing with all the aspects of national development were planned. The Tara Chand Committee, the Central Advisory Board of Education, and the Government of India appointed the Secondary Education Commission in 1952 under the chairmanship of Dr. A. L. Mudaliar: (a) to enquire into and report on the present position of Secondary education in India in all aspects, and (b) suggest measures for reorganization and improvement. As a result of the Commission's recommendations, high schools were upgraded to higher secondary schools and some high schools to multipurpose schools **(Mattoo, A., 2019)**

In 1964, under the chairmanship of Dr. D.S. Kothari, the Government of India published the National Policy on Education in 1968, which led to the 5th five-year plan education on wag and drafted the basis of this National Policy. 1977, the Morarji Desai Government appointed Ishwar Bhai Patel Committee to review the curriculum of Class IX and X. On 2nd October 1978, the National Adult education programmer (NAEP) was launched. In 1979, the draft National Policy on Education was published consisting of all aspects of education. Then in 1985, Rajiv Gandhi

became the Prime Minister of India, who focused on the Adult education sector. The National population Project was started in April 1980 and the National Literacy Mission was launched. A good number of A11-India bodies were constituted to coordinate different activities of states and to serve as expert bodies on different branches of education **(Mattoo, A., 2019)**.

1. Central Advisory Board of Education
2. University Grants Commission
3. National Council of Educational Research and Training.
4. A11 India Council for Technical Education.
5. National Council for Women's Education.
6. National Council for Rural Higher Education.
7. A11 India Council for Elementary Education.
8. Central Social Welfare Board.
9. National Board of Basic Education.
10. Central Board of Sanskrit.
11. National Board of Audio-Visual Education.

2.1.2: His Highness Maharaja Sayajirao Gaekwad-III: An Education Reformer

Formal education is a vital institution within a given social system which significantly influences the development of multiple facets of civilization and vice versa. For example, Education trains the individuals in the skills that are required by economy. Similarly, education is conditioned by the economy. Since Maharaja Sayajirao-III had dreamt to make all-round development of his State, it was imperative for him to cherish the most effectual aspect of society viz. education. His travels abroad in the developed countries had convinced him that formal education and proper training only could transform his society from within. To him education was basis of all reforms **(Ray Baren, 1983).**

Contemporary states like Travancore and Mysore had adopted organized and uniform education system and were hence regarded as educationally advanced states. The educational progress of these states exerted an inspirational drive to

Sayajirao-III's desires foster the growth of an educated public in his state. Later his incredible efforts in the field of education provided motivation to many states along with British India to introduce compulsory primary education in their respective regions; as it was Baroda State to be first in entire India to introduce free and compulsory education. He did not only provide free primary education to all but kept on expanding the scope of education by establishing institutions for secondary, higher education, technical education and so on **(Nurullah S & Naik J P, 1951).** A description of development of education during the time of Maharaja Sayajirao-III is described here.

2.1.2.1: Education Department:

The first attempt to organize an educational department was made by T. Madhavrao in 1875. The office of Vidyadhikari established by him continued during the time of Sayajirao-III, though with necessary changes. For administrative purposes the State was divided into six educational division viz. Baroda, Petlad, Patan, Kadi, Navsari and Amreli. Each division had inspector and deputy inspectors to supervise on an average fifty schools and 6000 students in the year 1939. There were also three special inspectors for the Urdu, Antyaja and Raniparaj schools. The gymnasium inspector had the responsibility of supervising physical education. With a view to expansion of education in the State educational committee were formed and the Central Education Board was created in Baroda. Important educational policy decisions, matters of general interests and queries were referred to this board. In 1916, The Ecclesiastical Department was started in Baroda to conduct 'Sanskrit Pathsalas' and to spread moral and religious education. One of the notable works of the department was to held lecture of science graduates explaining natural phenomena, with a view to dispelling popular superstitions regarding miracles **(Clark & Desai, 1923).**

In 1905 an effort was made to bring change into the administration for effective operation of State educational policies. With the extension of Local Self-Government in the State, the control of the village schools was handed over to the Local Boards as an experiment. In 1910 a commission was appointed to examine

the result of the transfer of the administration to the newly created boards at various levels. The Commission found that the Local Board was unfit to manage the village schools. Hence the village schools were again put under the direct control of the Education Department. The Government paid special attention to the Education Department. The percentage of revenue which the State spent on education was over nine per cent in 1881 and four per cent in 1904, against about one per cent in British India. The expenditure on education had increased to seventeen per cent in 1939. The department had followed the policy of increasing the efficiency of educational institutions and of encouraging private enterprise in the field of education. A number of associations had sprung up all over the State to supplement government efforts and magnanimous donations had come forward from philanthropists, for instance Zaveri Vithaldas contributed to build a kindergarten school Sheth Ujamshi Pitamberdas donated over a lac and half for an Ayurvedic College in Patan; and Sheth Mancherji Tata built a high school and Sheth Kesharichand Bhanabhai built a building for girls' school in Bilimora **(Desai G H, 1929)**.

2.1.2.2: Primary Education:

Efforts to establish educational institutions had been made by Malharrao Gaekwad and extended by T. Madhavrao. However, these initial efforts were merely a launch pad as a lot had to be achieved in the field of formal instructions. Maharaja Sayajirao-III initiated the process by establishing a variety of new schools in the State based on the medium of instruction, such as Vernacular, Anglo-vernacular and English. English schools were started for the Eurasian children whether of British employees, railway employees or officers of Gaekwad troops and a separate school for sardars' children was opened in 1887. All educational institutions, whether government schools, Aided-schools or numerous private schools were brought under the ambit of the Education Department on the recommendation of Education Commission with the view to introduce formal education, uniformity and better administration. As a result, satisfactory growth was recorded within the decade of these changes **(Nurullah S & Naik J P, 1951)**.

In 1891 the number of primary schools in the State rose to 558 as against 118 in 1881. The majority of the population in the State lived in villages and for the success of the efforts to educate its people it was inevitable to give emphasis to better the village education. In the villages there were mostly private schools established by the upper castes to educate their children in reading, writing and arithmetic. Therefore, in 1891, it was made mandatory that the School should be provided in all villages which could produce sixteen children willing to attend. Accordingly, 632 new village schools were established, about twenty in each taluka. Till 1891, most of these village schools were one teacher school, in 1892 an assistant teacher was appointed to schools with an enrollment of fifty students **(Nurullah S & Naik J P, 1951)**.

In 1893, an important decision, in the history of education not only in Baroda State but even in India was taken, of introducing free and compulsory primary education. Maharaja Sayajirao-III determined to ensure its success, deliberated to introduce it in phases rather than enforcing it on the entire state thus it was first launched in Amreli District, the most backward prants of his state. All the boys between the age of seven to twelve, and all the girls between seven to ten, living within the mile of school, were obligated to attend that school unless they were privately tutored, or were beyond the age limits declared to be compulsory or for certain other reasons, such as physically or mentally different **(Nurullah S & Naik J P, 1951)**.

During 1905-06, after more than a decade of introduction of compulsory primary education there were sixty-five schools in fifty-one villages of the Amreli Taluka. In addition to these, there were four compulsory schools under the Grant-in-aid system, while in fifteen private schools first three standards were maintained under the Compulsory Education Rules, thus bringing the total to eighty-four schools. Of these twenty-one were reserved for girls, the other being mixed for boys and girls together. The number of schools at this time in entire State was 1,266. Encouraged by the positive result of the compulsory primary education a special Council was appointed to determine the further course of action regarding the introduction of compulsory primary education in the rest of the state. The council recommended

that, over and above the six hundred Government Schools and the six hundred Local Boards Schools, new village schools should be opened in all the villages. Maharaja Sayajirao-III approved these recommendations and sanctioned the requisite funds for the purpose. The work of opening these schools commenced from 1st August 1906. Thereby primary education was made compulsory throughout the State. Books and slates were freely supplied to the children of poor classes **(Gowda, D. S.,1944)**.

The training of teachers was another vital aspect to draw the attention of the Government. Training schools for teachers was established in 1882 for females and in 1885 for males. In the training college of women different subjects, other than the formal subjects, like cutting and sewing, embroidery, singing and drawing, pedagogies, newspaper reading were included. With the restructuring of the educational schemes, the training college for the teachers had to be up-graded timely and provided with specifically trained teachers. In 1939 there were three institutions namely Training School for Men; Training School for Women; and Secondary Teachers' Training College, fulfilling the requirement by providing efficient teachers. Refreshers courses and short courses of training for teachers were introduced. After the introduction of compulsory primary education in the State in 1906, a Commission was appointed in 1909 to enquire into the functioning and progress made so far by the spread of primary education. Similarly, a second Commission was appointed in 1916 and a third in 1926. Finally, Mr. Littlehailes, Educational Commissioner with the Government of India, was invited to Baroda in 1934 to study the whole educational system of the State and to make recommendations **(Gowda, D. S.,1944)**.

2.1.2.3: Secondary Education:

The growth of primary education paved the way for further advancement of education viz., secondary education and higher education. The number of secondary schools increased along with primary schools. There were categories of high schools, such as: Government Schools, Anglo-vernacular and middle schools and English schools, in nearly all the taluka towns and big villages

provided with liberal funds under the system of grant-in-aid. Some primary schools were improved to accommodate students of secondary education. In 1875 there was only one Secondary school in the State but the number rose to 119 with 21,953 students in 1939. To induce students to take up secondary education certain provisions were made. Most important of them was the increased aid to the private school which would lessen the burden of higher fees on students. In 1939 a grant of 48,089 rupees was given to private schools. In addition, relief was given in fees to some extent to the poor students. Exemption from fees was given to the students of backward caste, poor Muslim and Marathas. The Government made provision for generous scholarships for capable students. Maharaja Sayajirao-III ensured the participation of his officials in his endeavors of promoting education with their ample involvement. Officials were further expected that they would educate their next generation by taking advantage of the new educational policy. Towards the fulfillment of this ideal Rs. 15,000 were sanctioned from Sayaji Memorial Fund in the year 1939 as secondary and higher education scholarships to encourage sons of sardars and assamdars **(Gowda, D. S.,1944)**

The secondary schools were comparatively fewer in number to primary schools. They were available either in the taluka towns or in big villages. Some of the students from the smaller villages had to go to the remote areas to attend secondary schools, which could be difficult and led to discouragement to take up secondary education. To remedy this problem Government had provided boarding and lodging facilities to both boys and girls, by means of attaching hostels to high schools at Patan, Visnagar, Mehsana and to the Maharani High Schools for girls at Baroda. There were nine other grant-in-aid hostels run by private bodies. With the view to broaden the outlook of the students and to acquaint them with different places, students of higher classes were taken out on excursion at the Government expenses **(Trivedi A. K,1933)**

2.1.2.4: Higher Education:

The foundation stone of Baroda College was laid by Maharaj Sayajirao-III in 1879. In 1881 Baroda College was affiliated to the Bombay University in the faculties of

Arts, Science and Law and was opened to students in 1882. It embarked on teaching of science in 1887, agriculture in 1890, law classes in 1891 and a chair of the comparative studies was established in 1915. Later additional facilities and activities were added like hostels and library. Apart, scholarship and loans were given to the deserving students for higher studies in foreign countries. Facilities were also provided for attending seminars, continental tours and visits to renowned institutions in order to help deserving students to augment their practical knowledge and experience. The idea of taking out a batch of college students on excursion in charge of the college professor to visit the places of historical, archeological and scientific interest in India was put into practice during the year 1907-08. A variety of subjects, facilities, activities, the new chairs and new branches could be added so as to render a university organization well-balanced and sumptuously adequate. It was a strong desire of Maharaja Sayajirao-III to give an autonomous institution for the higher studies to his people. His efforts to up-grade the Baroda College to attain the status of a university were supported by many learned men and educationists **(Sergent. W.,1928).**

. A commission of five members was appointed to look into the possibility of a university in Baroda in 1926, the Commission suggested that the possibilities on the grounds of which an appeal for the autonomous institution could be made were i) cultural grounds ii) economic and social grounds and iii) national grounds. The commission further argued that i) the cultural interest had been seriously hampered by the lack of freedom and independence caused through subordination to a university outside the state (and specially belonging to culturally different territory), ii) an affiliating university like Bombay with its manifold duties of looking after the higher education of separate provinces like Karnataka, Maharashtra, Gujarat and Sind could not do justice to the local economic and social conditions of particular area. iii) Universities had proved to be the most powerful nationalizing agencies. The main disappointment against the established universities in India was that they had not properly equipped their alumni for great social ends. However, the very idea of making university a forerunner of any national movement was preventing the British Government to grant Baroda with a university. To them

the Baroda university movement was built upon nationalist foundations; its very existence seemed seditious in nature; and upon that Maharaja Sayajirao-III had proved to be a defiant anti-British ruler. The disputes over many issues between the two Governments had escalated, especially after the Delhi Durbar; subsequent to British maligning over the incident, Maharaja Sayajirao-III avoided any further frictions. He learnt that keeping an arms distance was the key to successful resistance, and, thus in the 1920s, the Gaekwad ruler plotted his tactics accordingly. Publicly silent on almost all contemporary controversial activities taking place in his state, Sayajirao-III remained firmly in control, directing events from behind the scenes. However, owing to his inert approach towards the University movement delayed the entire process; and the State could obtain its first university—The Maharaja Sayajirao University of Baroda after his demise in 1949 **(Punekar K,1989).**

2.1.2.5: Technical Education:

Along with elementary education Maharaja Sayajirao-III also emphasized the provision of professional education in the State. Moreover Maharaja Sayajirao-III had initiated efforts to establish industries on the modern lines in the early phase of his reign itself. Therefore, in Baroda Kalabhavan was in established in 1891 for modern technical education, to transform the traditional artisan into a modern technician. The Kala Bhavan was founded to train technical manpower, whose skills could then be harnessed to "develop the existing industries of the state as well as to help in introducing new industries calculated to improve the economic condition of Sayajirao of Baroda numerous subjects". In 1896, about eighty-three of the 204 students came from the artisan castes and families of farmers and cultivators. By 1909, Kalabhavan was offering courses in following six schools, namely (i) school of mechanical technology, (ii) school of dyeing and chemical technology, (iii) school of weaving technology, (iv) school of architecture and civil engineering, (v) school of commercial **(Raina & Habib, 1991)**

2.1.2.6: Education for Women:

One of important measures which accelerated Maharaja Sayajirao-III's project of modernizing Baroda State was the emphasis given to the women education. Maharaja Sayajirao-III believed that the role of women was very significant in the society. He condemned the indifferent attitude and lethargy of society in the development of women. Maharaja Sayajirao-III adopted the policy wherein women were encouraged to take up formal education or at least to be literate. In 1880 there were eight girls' schools throughout the State, with a total attendance of 502. It was then decided to open schools for girls in all places where a sufficient number of students were forthcoming. If the number of girls was less, then girls under twelve years of age were admitted to the boys' school. Girls Schools were started in 1875. In 1915, the number of girls' schools was 394. The total number of girls taking education at this time was 94,402,63 including those studying in mix schools **(Punekar K,1989).**

Thereafter with the introduction of secondary, higher and technical education, a number of primary schools were upgraded to high schools and certain courses on needle-work, embroidery, knitting, hygiene, scientific house-keeping were also taught, to train girls to be better wives, and mothers, compromising with the conservative forces. The High School was provided with a building of its own, and a separate staff. This institution later on, came to be known as the Maharani Girls' High School. The curriculum of girls' schools was similar to that of boys' schools or mixed schools. But modifications were made in curriculum wherein subjects like. Practical training in cooking was given in the schools at Baroda, Petlad, Patan, Navsari and Amreli. Special arrangements were made for their accommodation. Scholarships were available for girls intending to study in higher stages. Owing to these efforts of the Government the total number secondary schools for girls in 1938-39 were five with 1,359 in it and 624 girls were taking classes in the mix schools. The total number of girls attending secondary schools was 1,983 in 1939 **(Punekar K,1989).**

For the higher education the female teacher training college was started in 1882. In 1939 total number of girls attending the college was two hundred and seventy-six. In 1923 a Women's College was established by S.N.D.T. University. For the benefit of women, who could not take formal education, owing to pressure of home duties, a zanana class was conducted and the inmates were given instructions in elements of reading, writing, keeping accounts, drawing, music, needle work, and embroidery at Baroda. The separate schools, college and specially arranged zenana classes encouraged even the conservative families to send their girls to take education. As physical training for girls was made compulsory in Baroda city and Prant. Their independency was a key to their upliftment and their mental and physical strength would help them in attaining it well, so emphasis was given to physical training and education even to girls. Physical training and games suited to the girls were undertaken in the girls' schools. Provision of separate Mahila Library was made in the city, reading rooms were created for them at many places in the state and the travelling libraries also helped in liberating and also in maintaining the literacy even amongst women in the State **(Gautam R. R,1941).**

2.1.3: Educational Hubs established by the Gaekwad's in Vadodara.

2.1.3.1: Baroda State Library (Year of Establishment -1877, Legacy of 143 Years)

The Baroda State Library, now known as the Jaisinhrao Library is the most beautiful and the most silent building one can find amidst the frenzy of the government building of the Khoti compound. This library was the precursor of the Library Movement in India started by Maharaja Sayajirao Gaekwad-III. The library was established in 1877, it was housed in the Vernacular science college. The building has been designed by Major Charles Mant in the Indo-Saracenic style of architecture. Completed in 1882, even though the building displays the same spirit as that of the other buildings, it is unique in itself. It is a double-storied, simple rectangular structure with a tower-like portion housing a staircase, on one side of its front façade. The library is still used by the people it was built for and is a reminder of the foresight of a visionary king, Maharaja Sayajirao Gaekwad III.[8]
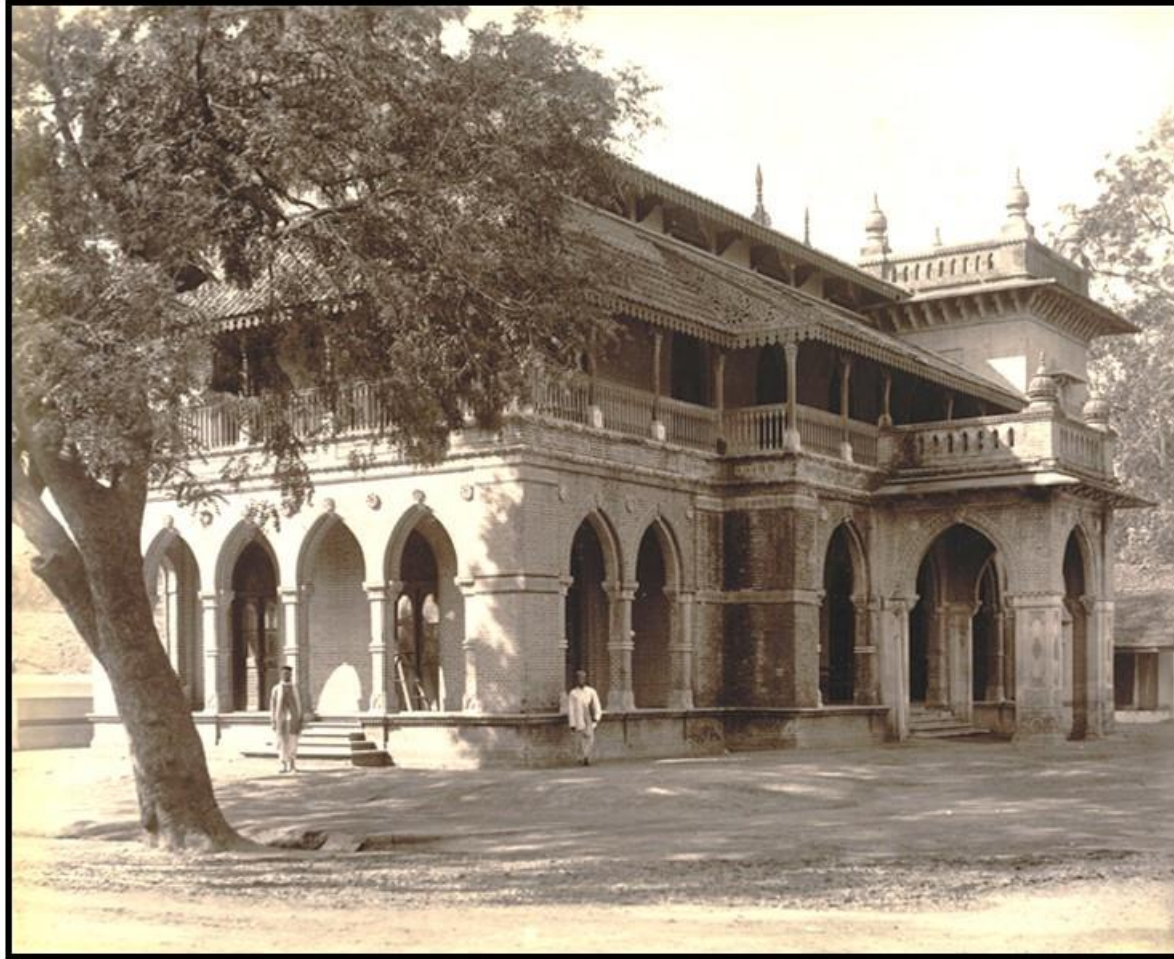
Fig. 1 Baroda State Library
Source: https://images.app.goo.gl./HmkLPhxg9J8TvDYw5

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2.1.3.2: The Maharaja Sayajirao University of Baroda (Year of Establishment - 1881, Legacy of 137 Years)

Established as the Baroda College of Science, presently known as The Maharaja Sayajirao University of Baroda (MSU), the college was opened in 1881. The foundation stone of the college was laid by visionary ruler Maharaja Sayajirao Gaekwad-III on January 8, 1879. It became a university on 30th April 1949, after the independence of the country, and was later renamed after its benefactor Maharaja Sayajirao Gaekwad-III. It is the only university in Gujarat providing English as medium of instruction for all the courses. The idea of having a State university sprung up in the minds of Baroda State academicians long before the idea of regional universities came up in India. Dr. Jackson, the principal of the Baroda College during 1908, was the first person to come with the idea of having a full-fledged science institute. The University is the most reputed and prominent of all the educational institutions in the country and has under it over 120 public schools and over 100 private schools. It attracts a wide variety of people from all over India as well as from abroad. Over the years, a blend of local, national, and foreign students has lent the university a unique culture. The Maharaja Sayajirao University of Baroda which started as a state college now has over 14 faculties, Sanskrit Mahavidyalay, Polytechnic, 4 Institute and a College. There are 12 Boys and 4 Girls residential hostels. The University has other facilities like Library, Computer Centre, Health Centre, Centre for Lifelong Learning and Extension, General Education Centre, Department of Physical Education, Press, University Guest House, Student facilitation Centre, NCC and NSS Centre, Pavilion. The university caters to over 100,000 students with courses ranging from Medicine to Commerce. Covering a massive area of 275 acres, it houses 89 departments spread over 6 campuses and some of the most famous buildings of Baroda.[8]

Fig. 2 The Maharaja Sayajirao University of Baroda

Source: https://images.app.goo.gl/kTnZeeDAr27nduJH6

2.1.3.3: Stree Adhyapan Pathshala (Year of Establishment-1882, Legacy of 138 Years)

Fig. 3 Stree Adhyapan Pathshala

Sources:https://images.app.goo.gl/oDPg6V8Xpab852v6

The Stree Adhyapan Mandir which was also known as Zenana School which is located next to Lal Court, nearby Sursagar Lake in the Central of Vadodara City. In 1882, a female training college with nine students was established on the first floor of Lalubahadur Haveli at Mehta pol. The main objective behind starting this college was to train, educate, and empower women so that they can become independent. This girl's school was also associated with the college. At present, the institution offers a Diploma in Elementary Education (PTC) in Gujarati and Marathi medium.[8]

2.1.3.4: Music College (Year of Establishment-1886, Legacy of 134 Years)

Sangeet Ratna Maula Bakhsh was the founder and principal of the Music School in 1886. At present, the Music School houses is renowned as the Faculty of Performing Arts. Sir William Emerson has designed this unique faculty, which is one of its kind in western India. The institute receives students from various countries of the world, such as - USA, Nepal, Japan, and Mauritius. The faculty has established itself as one of the star institutions in India for its in-depth study of the classical performing arts. The institute has grown over the years and it is currently divided into 4 departments namely. [8]

- Department of Dance
- Department of Music (Indian Classical/Vocal)
- Department of Music Instrumental
- Department of Tabla
- Department of Dramatics

Fig. 4 Music College

Source: https://images.app.goo.gl/EE4pu5KRvU4riWv5

2.1.3.5: Kalabhavan Technical Institute (Year of Establishment-1890, Legacy of 130 Years)

Fig. 5 Kalabhavan Technical Institute

Source: https://images.app.goo.gl/6d2A7os3aBVuDgmW7

The Maharaja Sayajirao University of Baroda started its journey from the Senapati Bhavan as the "Kala Bhavan Technical Institute" in the year 1890. In the year 1949 that it was established as the Faculty of Technology and Engineering and assimilated in The Maharaja Sayajirao University of Baroda. After being run from the Senapati Bhavan for a short period, the institute was gifted with a majestic palatial building by Maharaja Sayajirao Gaekwad- III in the year 1892. The element used expansively in the structure, giving it the regional flavour is the cusped arch that dots the passageways of the building. Motifs of elements such as the lotus, elephants, flowers, and crowns embellish the building defining the style of the building even furthermore.[8]

2.1.3.6: Govindrao Madhyvati School (Year of Establishment-1890, Legacy of 130 Years)

Fig. 6 Govindrao Madhyvati School
Source: https://images.app.goo.gl/Rno6tBpDPvYV7GT47

Govindrao Madhyavarti School is situated near the Khanderao Market. It was commissioned by Maharaja Sayajirao Gaekwad-III in 1890 in the memory of Maharaja Govindrao Gaekwad. This school also functioned as Gayan Shala or Music College for some time. The old building was later demolished to give way to a new building in 1937, also commissioned by Sayajirao III. The school has the honour of being the only building erected in the memory of Maharaja Govindrao. The planning of the school is such that all of its spaces have proper ventilation with ample daylight. At its rear side is a huge open ground used by the children as a playground. The school even has a stage on its terrace. Earlier this was used for the flag hoisting ceremony.[8]

2.1.3.7: Modal Farm (Year of Establishment-1892, Legacy of 128 Years)

Fig. 7 Modal Farm
Source: https://images.app.goo.gl/3UUJdkdS8Er6D7ti8

Modal farm was one of the initiatives started in 1892; it had agricultural education and farmer training as its focus. The farm also worked on experimenting and production of good seeds. An Agricultural institute was established in Baroda in 1936 and was called as Sheth Dosabhai Maganlal Agricultural Institution. This institution offered facilities of specialized training and higher agricultural education. Earlier this model farm was used to teach farming to the prisoner from the Central jail. It was also used as a juvenile correction Centre. All these efforts were made to train the prisoners so that they are released, they can earn their bread.[8]

2.1.3.8: Baroda Museum (Year of Establishment-1894 Legacy of 126 Years)

Fig. 8 Baroda Museum
Sources https://images.app.goo.gl/Gh1T5kjMeAe2uCo6

The Baroda Museum & Picture Gallery in Vadodara was built in 1894 on the lines of the Victoria & Albert Museum and the Science Museum of London. It preserves a rich collection of art, sculpture, ethnography, and ethnology. The picture gallery offers a collection of originals by famous British painter J.M.W. Turner and John Constable and many others. The Egyptian mummy and skeleton of the baby blue whale are major attractions of the museum. Other treasure includes the famous Akota bronzes dating the 5th century AD, A collections of Mughal miniatures, a full-fledged gallery of Tibetan Arts and oils by several Europeans.[8]

2.1.3.9: Maharani Chimnabai Nyay Mandir (Year of Establishment-1896, Legacy of 124 Years)
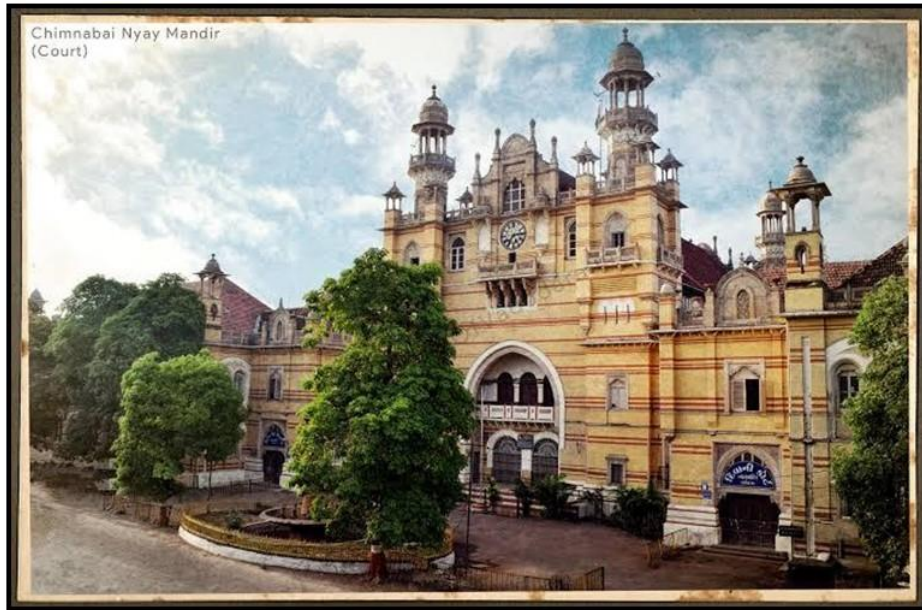
Fig. 9 Maharani Chimnabai Nyay Mandir)
Source: https://images.app.goo.gl/zcnHPJk5kF7JrEEV9

Maharani Chimnabai died in 1884; the grief-stricken monarch laid the foundation of a building which was to be the Maharani Chimnabai Market Design by R.F. Chisholm. But when the construction was completed, it was found to be too large and grand for a market and it was decided to use it as a Town Hall. After a few years of being used as a Town Hall, it was converted to an imperial court, which was inaugurated on 30 November 1896 by the then Governor-General and Viceroy of India Lord Dufferin. The gem of the building is undoubtedly the beautiful statue of Maharani Chimnabai-I Carved out of white Italian marble the graceful statue was made under the supervision of the famed sculptor A Felici in the year 1890. The structure does not only carry its architectural legacy but also carries the legacy of the most adored Maharaja of the city and his beloved Maharani. The Nyay Mandir is an example of yet another heritage building with its fate lies in the authorities. [6]

2.1.3.10: Shree Sayaji High School (Year of Establishment-1906, Legacy of 114 Years)

Fig. 10 Shree Sayaji High School
Source: https://images.app.goo.gl/JwcV7KSJ3y34FG9

Shree Sayaji High School was the 1st high school to be established in the old city area of Vadodara. It was originally started in a house near Sadhana Talkies lane near Nyay Mandir as 'Grant in Aid High School' by Shri Hirabhai Jethbhai Majumdar in 1906 under the name "Grant in Aid High School. It was on fire and furniture and books worth about five thousand rupees were also found in it at that time. The school was started in this new building in June 1908 and it is remembered by the people of India with the school named 'Grant in Aid High School'. The school is located in the heart of Vadodara city in the Ghadiyali Pol area and proved to be very useful for educational purposes. [8]

2.1.3.11: Central Library (Year of Establishment-1906, Legacy of 116 Years)

Central Library of Baroda was conceived in 1906 when Maharaja Sayajirao Gaekwad-III introduced compulsory and free primary education in the Baroda state. Maharaja Sayajirao Gaekwad-III not only made his state prosperous but also triggered the Library Movement in India, in 1906. The library became the core of Central Library of Baroda with a network of libraries in all the towns and villages of his state. While visiting the United States, the Maharaja came across William Alanson Borden, the Librarian at the Young Men's Institute of New Jersey. Impressed by him, the Maharaja immediately invited him to Baroda. The library commissioned in 1910 was completed in the year 1931 at the cost of Rs. 4 lakhs along with another 2 lakhs being invested in furniture, books, and magazines. To keep the books safe against the harmful effects of changing temperatures, the area facing windows was landscaped with shrubs and trees which processed the mild. For protection against pests and termites, no wood was used even for the stacking areas. The library is now well-modernized and has implemented computerized cataloguing systems and also has a video facility in the children's section. 352 number of stacks are, 289966 number of books, 22572 member, 1157 books transactions every day, and 1775 everyday readers in central library .[6]
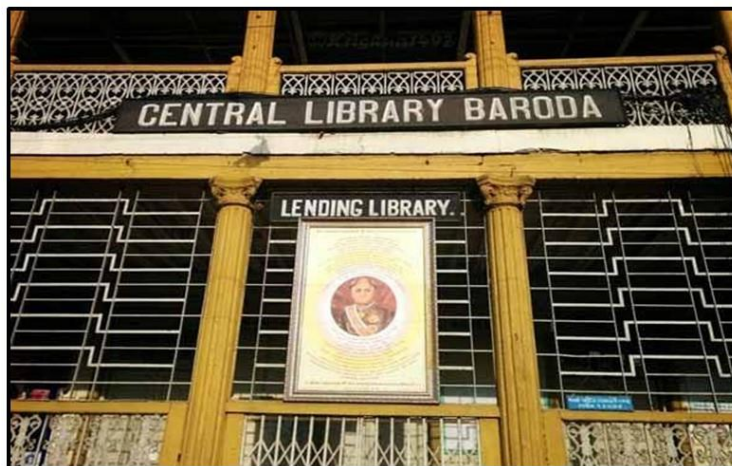
Fig. 11 Central Library
Source: https://images.app.goo.gl/ejsnPyGWgq8yNy66

2.1.3.12: Maharani Chimnabai High School (Year of Establishment-1911, Legacy of 109 Years)

Fig. 12 Maharani Chimnabai High School
Source: https://images.app.goo.gl/t6ZZJHMjStxDHUMd6

In 1906, Maharaja introduced free and compulsory primary education for children of Baroda state. Presently, the school is run by Baroda education Society and is the only school in Gujarat that runs all streams up to 12th standard in the Marathi medium. With the increasing demand for English Medium School, the M.C. High School has stood the test of time; maintain its status as a Marathi School over the year.[6]

2.1.3.13: Maharani Chimnabai Stree Udhyogalay (Year of Establishment-1914, Legacy of 106 Years)

One of the major steps that Maharani Chimnabai took in the direction of women empowerment was an establishment of a professional training institute called Shree Chimnabai Stree Udhyogalaya. The idea of setting up a vocational institute

was to give vocational training to women and create opportunities and carry-on activities to provide income to the indigent women. In the beginning, the ladies were given training in tailoring. A certificate from the Udyogalaya was recognized by the Government. Orders were also taken for spices, jams, pickles, and snacks and was prepared by women. As the number of students increased, new courses such as embroidery, lace making and book binding were also added. Later, in the year 1936, the institute was registered as a charitable institute. This institute was run by a committee of ladies with the help of a grant from the Government supplemented by private donations. After this, a huge amount for the construction of the separated building was granted from the Sir Sayajirao Diamond Jubilee Fund. Thus, a separate building was constructed around 1938-39. At present, the institute is more than 100 years old and still, it continues to provide training to hundreds of women and at the same time helping them to stand on their own feet **(Mitra, S. M. 2005).**

Fig. 13 Maharani Chimnabai Stree Udhyogalay
Source: https://images.app.goo.gl/uwKZaWKB2AutFwKz6

2.1.3.14: Purush Adhyapan Mandir (Year of Establishment-1914, Legacy of 106 Years)

Purush Adyapan Mandir was the part of an initiative started by Maharaja Sayajirao Geakwad-III. It used to provide technical education to the men of the city as well as the other territories of the state.

It is located on the DEO Kacheri campus in the Karelibuag area of the city. Built-in the colonial style, the building displays exposed brickwork. The double-storied building features a tower and an arcaded corridor on both levels. Its colonial charm is the louvred windows, which used to provide the students with ample daylight and fresh air. [6]

Fig. 14 Purush Adhyapan Mandir
Source: https://images.app.goo.gl/zY8zj5YvprHh&1v77

2.1.3.15: Sanskrit Mahavidhyala (**Year of Establishment-1915**, **Legacy of 102 Years**)

Sanskrit Mahavidyalaya of The Maharaja Sayajirao University of Baroda, formerly known as the Rajkiya Sanskrit Mahavidyalaya during the time of the erstwhile Baroda State has completed eighty-five years. A program for preparing students through courses in the Vedic and the Shastric discipline in a traditional approach is a special feature of its academic and professional side.

These courses prepare the students leading to Certificates, Diplomas, and Degrees. The main objective of the institute is to train the students to enable them to accept various professions related to oriental studies and render valuable services to the community. Baroda Sanskrit Mahavidyalaya was established in 1915. The outer-Look of this bungalow is in Indo-British style. The
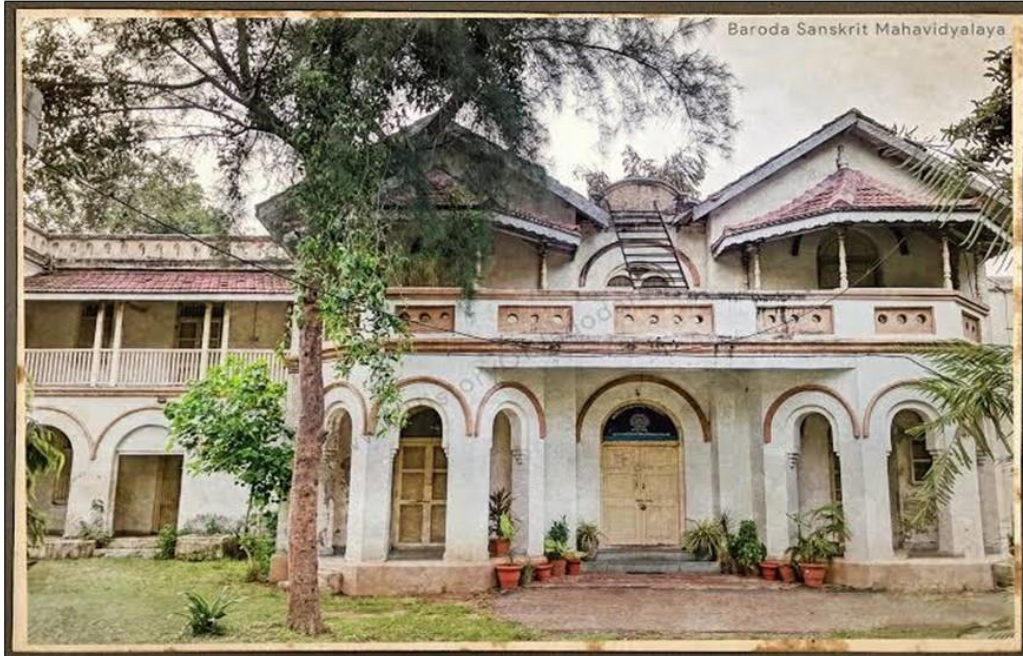
Fig. 15 Sanskrit Mahavidhyala
Source: https://images.app.goo.gl/UMQTpRNw1YUZgiLo6

wooden doors and windows give the Bungalow a decent look of heritage.[6]

2.1.3.16: Maharani Chimnabai Kanya Vidhyalay (Year of Establishment-1916, Legacy of 104 Years)

In 1893, Maharaja Sayajirao Gaekwad III introduced free and compulsory primary education. By, 1906, it covered his whole state. He was the first Indian ruler to embark on such an audacious mission- a target which independent India could not achieve until the Right to Free and Compulsory Education Act 2009 was enacted (Gokhale, A., 2017). Maharani Kanya Vidyalaya (Gujarati Medium) one of the well-reputed schools in Gujarat is managed by Kelavani Trust, Vadodara. Maharani Chimnabai Kanya Vidyalaya was established more than a century back, under the trust of Baroda. The school was founded by Kelavani Education Trust in June 1998. At present, the Maharani Kanya Vidyalaya (Gujarati Medium) is 104 years old. The building has 3 floors consisting of 34 rooms on the ground and the first floor.[9]

Fig. 16 Maharani Chimnabai Kanya Vidhyalay.
Source: https://images.app.goo.gl/aoXpfJhGMfq9tpjR7

2.1.3.17: Maharani Chimnabai Chhatralaya (Year of Establishment-1916, Legacy of 104 Years)

Maharani Chimnabai-II, the second wife of Sayajirao Gaekwad and Maharani of Baroda was a progressive woman who worked for girls' education, abolishing the purdah system and child marriage. She also became the first president of the All-India Women's Conference (AIWC) in 1927.[10] The purpose of starting the Maharani Kanya Chhatralay was to provide an opportunity of staying and studying for the survivors of the Baroda state employees and tribal girls.

Fig. 17 Maharani Chimnabai Chhatralaya
Source: https://images.app.goo.gl/aoXpfJhGMfq9tpjR7

2.1.3.18: Baroda Cricket Association (Year of Establishment-1934, Legacy of 86 Years)

Baroda Cricket Association was started by Maharaja Sayajirao Gaekwad-III in 1904 and in 1934, he laid the foundation of Cricket in Baroda's state's Motibaug

Ground. Baroda Cricket Association got its affiliation to the Cricket Board of India in 1937. Since then, Baroda has emerged as Ranji Trophy Champions in the year 1942-43, 1946-50, 1957-58 & 2000-01. Maharaja Pratapsinhrao Gaekwad was also a skilled cricket player, inspiring youth of Baroda to get exposure at international/national levels. This period brought up abundance in the local talent of international standing. Even the daughter of the state was encouraged to play cricket. She was named the president of Gujarat Women's and Vice-President of the All-India Women's Cricket Association as well as the Head of the Women's Wing of Baroda Cricket Association. The current Vice-president of the BCA also comes from the Royal family. The BCA office is housed within the precincts of the Lakshmi Vilas Palace, the home of the royal family.[9]

Fig. 18 Baroda Cricket Association
Source: https://images.app.goo.gl/QHexbfUrpVtEeu7

2.1.3.19: Diamond Jubilee Institute (Year of Establishment-1938, Legacy of 82 Years)

Fig. 19 Diamond Jubilee Institute
Source: https://images.app.goo.gl/MEoSno3shiR97uUj7

In 1938, when the Maharaja Sayajirao-III completed 60 years of his rule, the people of the city arranged for a pompous celebration for their revered king. A committee called was established to manage the huge amount of funds gathered by the citizens. The funds gathered were so huge, that even after the celebration was over, a whopping amount of 1 Crore was left. The campus created for the institute almost became a mini education complex with different sets of departments. These include electroplating, woodwork, painting, sewing, and carpentry, etc. These departments provided the best training to pupils and made them able to stand on their feet. The complex has lost its former frame and has fallen into due to years of not being used.[6]

2.1.3.20: Baroda High School-Bagikhana (Year of Establishment- 1961, Legacy of 59 Years)

The building was commissioned by Maharaja Sayajirao Gaekwad-III in 1909 and construction was completed on October 1, 1913, with A.H Coyle as the Chief-Engineer and architect. It is a huge rectangular precinct with stables, garages, and other built masses encircling the huge open court. Two of the other 5 gates are located on the two front corners of the structure. Each of these two gates is entered through a huge three-centered arch and it is topped with a huge dome embellished with a finial. The two towers of the main gate and the two corner gates were used as watchtowers to keep an eye on the neighboring areas as well as the activities going on inside the huge court. Today, this stable house, the Baroda High school, Bagikhana is more famously known as BHS, which was the first co-educational English medium School of the time. The school was provided with the premises of stable on lease by Maharaja Fatehsingh Rao Gaekwad at the token amount of one rupee in 1961. The School is now managed by the Baroda Lions Club Education trust that subsequently started three more schools with the same name in three different locations of the city.[6]

Fig. 20 Baroda High School- Bagikhana
Source: https://images.app.goo.gl/RxJhhFJe8rhrEfux8

2.1.3.21: Prince Ashokraja Gaekwad School (Year of Establishment- 2004, Legacy 16 Years)

Fig. 21 Prince Ashokraja Gaekwad School

Source :https://images.app.goo.gl/X7eVAsCqBdGV7Q1PA

Rani Sahiba Devyaniraje Gaekwad in found memory of her husband, Late 'Prince Ashokraje Gaekwad' (Grandson of Late H.H. Maharaja Sayajirao Gaekwad-III), efflorescent into the institution. Prince Ashokraje Gaekwad School (PAGS) is located at Dhairya Prasad Place, Lalbaug Main Road, Manjalpur Vadodara (Baroda) is one of the popular schools in Gujarat. This school is counted among the top-rated Schools in Gujarat with an excellent academic track record. The school is being managed by Rani Devyani Raje Gaekwad Trust.[11]

2.1.4: Significance of Virtual Tourism in Promoting Heritage

Historic towns often exhibit a rich mixture of social, cultural, architectural, Educational and historical heritage values. However, streetscapes, urban fabrics and buildings are developing and changing to suit the demands of stakeholders while the role of urbanization in preserving the heritage characteristics of the environment is ignored. Promotion and preservation and of heritage sites and

buildings has become an increasingly daunting task as they are under the threat of obliteration due to urbanization. While growth and expansion are a common and inevitable occurrence everywhere, there is a potential for loss of historical areas that have the heritage value to the people (Cohen, 1999; Cullen, 1961).

A United Nations report (2017) articulates that by the year 2050, 69 per cent of the population would be concentrated in urban areas. The project on Urban Conservation Planning in Southeast Asia (2017) of the Getty Conservation Institute, emphasized the difficulties faced in the conservation of the urban heritage in countries like India, China, and other Southeast Asia region due to urbanization. Excessive population growth, economic development, lack of institutional and legal frameworks, the ungovernable intrusion of modernization, poor planning and inadequate awareness of heritage values combine to produce a lot of problems that threaten the tangible and intangible heritages and set the stage for the destruction of the historical buildings and heritage sites. Therefore, it becomes the responsibility of stakeholders to work to promote and conserve the distinctive heritage buildings and site for future generations (Persson, 2004).

Heritage not only play a crucial role in the development of a region but also provides a reflection of its old age traditions (Sanchez-Aparicio,et al., 2018). Growing recognition of the importance of heritage has resulted in the formation of strengthening of international culture heritage organizations whose goal involves protection, promotion, management and dissemination of the cultural heritage (ICOMOS, 1999; UNESCO, 1983). Several international organizations are involved in the protection and management of the world's cultural heritage. Among the most prominent organizations are United Nations Educational, Scientific and Cultural Organization (UNESCO), International Council of Museums (ICOM), The International Council on Monuments and Sites (ICOMOS) and International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM). These organizations have adopted a various tools and tactics in the promotion and management of heritage around the world at the national and international level

amongst which virtual reality plays a significant role in promotion and conservation of heritage site **(Somipam R. Shimray, 2019).**

2.1.4.1: Virtual Tourism

One of the most significant developments in the field of information and communication technology (ICT) expected to greatly impact the heritage tourism today is virtual tourism. Virtual tourism technologies nowadays offer unbounded potentials for mass virtual visitations to actual tourism destinations (Gutierrez et al., 2008).

According to **Daniel A. Guttentag, (2010)**, there are six areas of tourism where Virtual Tourism can be truly valuable: planning and management, entertainment, education, accessibility, heritage preservation and promotion. In planning and management, since a virtual tour is usually composed of a sequence of videos or a panoramic wide-angle representation of a physical space of an existing location the destination managers can benefit these wide-angle representations for analyzing the possible developments at the heritage site. The destination, plans can be communicated to the group or community around, with the help of virtual tours, and feedback can be received from the stakeholders**.** Regarding entertainment, virtual tours can serve itself as an attraction. As virtual tours with multimedia elements such as sound effects, music, narration, and text gives a filling of immersive and engaging virtual experiences. Concerning to educational potential, the virtual tour, provides a digital learning in which the digital devices support participants in the learning, by encouraging users to explore and engage with heritage property independently with automated human voice technology used for creating narrations, the viewer is captivated by the virtual walkthrough. In case the access to a heritage that are at too distant, expensive, inhospitable or dangerous, fragile, or some other ways difficult to explore, virtual tours can be of assistance in enabling the experience no matter the circumstances. Especially it is beneficial to the people whose ability to travel is somehow limited. Regarding the heritage preservation, virtual tour can offer a possibility to access the heritage sites

virtually, and this way help to protect the precious heritage environments or attractions from the tourism masses.

Similarly, **Krau (2016),** articulates that virtual tours have two major usages in tourism, inspiration and demonstration, and because of its highly visual nature is can be a very powerful destination promotion tool. It presents users with an immersive experience of an activity, location, or destination through the use of technology. There are different types of virtual tourism offerings, but there's usually a combination of virtual reality, still images, video, audio, narration, interactivity, and other multimedia formats to provide an experience of a destination that a user cannot get through images or websites alone. Users can access virtual tourism content using a virtual reality headset for the most immersive experience, but they can also usually view the content on a normal computer or even a mobile device **(Rahman and Bhowal, 2017).**

Types of Virtual tours

a. **Video tours:** A video tour is a full-motion video of a location. Unlike the 360 virtual tour's static wrap-around feel, a video tour is as viewers were walking through a location. Using a video camera, the location is filmed while moving from place to place. Video tours are continuous movement taken at a walking pace. Video tours also include music, narration, and text overlay. The Video tour is mobile-friendly and no need to control the video.[13]

b. **360-degree panoramic tours:** Panoramic indicates an unbroken view since a panorama can be either a series of photography or panning video footage. The panoramic virtual tours are made up of several shots taken from a single vantage point.[13]

c. **Still photo tours:** The most common way people choose to display their properties is through a still photo tour or a photo gallery like those used on VRBO.com. Still, photo tours are less time-consuming, viewers can control these photo tours.[13]

d. **Floor plan tours:** An interactive floor plan tour combines still photography with an architecture floor plan of the entire property so that the visitor can have a high-level view and navigate through the home. A floor plan tour gives the visitor an overall feel for the size and layout of the property and is also mobile-friendly. [13]

Technological advancement has provided heritage with new learning environments through the use of virtual tour, which can foster the accessibility and understanding of history and propose new ways of interacting with heritage. The digital realm is the perfect context for heritage education, because processes of knowledge, comprehension, enhancement, awareness, and enjoyment of heritage destination take place on the internet, making it a means of identity in a universal context **(Alex, et al., 2020)**. Virtual tour applications increase the "Accessibility" for tourists and is one of the best alternatives to access historical places, structure or sites, which are lost or cannot be accessed in the real world. **(Gibson & Mary, 2018)**

2.1.4.2: Virtual Tours Museums Developed by Ministry of Culture, Government of India to Promote Indian Educational Heritage

*   **Developed by Allahabad Museum (Estd.:1931)**: The Allahabad Museum located in the picturesque Chandrashekhar Azad Park is among the National level museums of India. It was originally established under the aegis of Allahabad Municipality in 1931 with a small collection of models of birds and animals. Today, Allahabad Museum has a rich and diversified collection of art, antiquities, paintings, sculptures, coins, ceramics, archaeological objects, illustrated manuscripts, farmans, decorative art objects, arm & armours, textiles, natural history specimen, photographs, prints and personalia collections pertaining to Gandhi, Nehru and Literary personalities of Allahabad like Sumitra Nandan Pant, Suryakant Tripathi "Nirala", Premchand, and Mahadevi Verma. The artefacts are displayed in sixteen different galleries including an

Exhibition named in the memory of A.K. Coomaraswamy Memorial Hall and a Central hall where from time-to-time various temporary exhibitions on different themes are organised for the rotation of art objects and antiquities from the reserve collection of the museum. The virtual tour was launched on 15th April 2020 keeping in mind the Covid-19 pandemic. The link for virtual tour of museum is https://theallahabadmuseum.com

- **The National Museum (Estd.:1949):** The blueprint for establishing the National Museum in Delhi was prepared by the Maurice Gwyer Committee in May 1946. An Exhibition of Indian Art, consisting of selected artefacts from various museums of India was organized by the Royal Academy, London with the cooperation of Government of India and Britain. The Exhibition went on display in the galleries of Burlington House, London during the winter months of 1947-48. It was decided to display the same collection in Delhi, before the return of exhibits to their respective museums. An exhibition was organized in the Rashtrapati Bhawan (President's residence), New Delhi in 1949, which turned out to be a great success. This event proved responsible for the creation of the National Museum. On August 15, 1949, the National Museum, was inaugurated in the Rashtrapati Bhawan by Shri R.C. Rajagopalachari, the Governor-General of India. The foundation of the present building was laid by Pandit Jawaharlal Nehru, the Prime Minister of India, on May 12, 1955. The first phase of the National Museum building was formally inaugurated by Dr. Sarvepalli Radhakrishnan, the Vice President of India, on December 18, 1960. The second phase of the building was completed in 1989. While the Museum continued to grow its collection through gifts that were sought painstakingly, artefacts were collected through its Arts Purchase Committee. The Museum presently holds approximately 2,00,000 objects of diverse nature, both Indian as well as foreign, and its holdings cover a time span of more than five thousand years of Indian cultural heritage. The National Museum was initially looked after by the Director General of Archaeology until 1957, when the Ministry of Education, Government of India, declared it a separate

institution and placed it under its own direct control. At present, the National Museum is under the administrative control of the Ministry of Culture, Government of India. The link for virtual tour of museum is http://www.nationalmuseumindia.gov.in

- **The Salar Jung Museum (Estd.:1951):** It is located on the southern bank of the River Musi in Hyderabad, Telangana State of India. The Salar Jung family is responsible for its collection of rare art objects from all over the world. The family is one of the most illustrious families in Deccan history, five of them having been prime-ministers in the erstwhile Nizam rule of Hyderabad-Deccan. Nawab Mir Yousuf Ali Khan, popularly known as Salar Jung-III relinquished the post of Prime Minister in November 1914 and devoted his life in enriching his treasures of art and literature. He was a great collector of antiques, art and rare manuscripts, patronized poets, writers and artists, encouraging literary and cultural activities. This went on for forty years till he passed away on 2nd March 1949., the entire collection was left behind without an inheritor. It was the family members of the late Nawab who got together to gift the fabulous collection to the nation. The collection in the form of a museum was declared open on 16th December 1951 in Dewan Deodi, home of late Salar Jung's and was opened to the public by Pandit Jawaharlal Nehru, the first Prime Minister of India. Later the Government of India with the consent of the family members took over the Museum formally through a compromise deed and the museum was administered by the Ministry of Scientific Research and Cultural Affairs, Government of India. Finally, in 1961, through an "Act of Parliament" the Salar Jung museum along with its library was declared an "Institution of National Importance". The link for virtual tour of museum is http://www.salarjungmuseum.in

- **The National Gallery of Modern Art (Estd.:1954):** The idea of a national art gallery to germinate and bear fruit was first mooted in 1949. It was nurtured carefully by Prime Minister Jawahar Lal Nehru and Maulana Azad, sensitive bureaucrats like Humayun Kabir and an active art community. Vice-president Dr Radhakrishnan formally inaugurated the NGMA on March 29, 1954. The choice of Jaipur House, one of the premier edifices of Lutyens' Delhi, signified the envisaged high profile of the institution. Designed by architect Charles G Bloomfield and his brother Francis B Bloomfield, as a residence for the Maharaja of Jaipur, the butterfly-shaped building with a central dome was built in 1936. It was styled after a concept of the Central Hexagon visualized by Sir Edwin Lutyens. It was Lutyens, along with Herbert Baker, who visualized and gave shape to the new capital in Delhi. Along with buildings designed for other princely potentates like Bikaner and Hyderabad, Jaipur House girded the India Gate circle. The famous architect conceptualized a harmony of facades giving the buildings a distinctive character. NGMA's inauguration was marked by an exhibition of sculptures. All the prominent sculptors of the time like Debi Prasad Roy Chowdhury, Ramkinkar Baij, Sankho Chaudhuri, Dhanraj Bhagat, Sarbari Roy Chowdhury and others had participated. The show spoke of the painstaking preparations made by NGMA's first curator Herman Goetz. A noted German art historian, Goetz had earlier been responsible for setting up the Baroda Museum. Since Goetz's tenure, NGMA has had a string of distinguished directors. The Gallery is the premier institution of its kind in India. It is run and administered as a subordinate office to the Department of Culture, Government of India. The NGMA has two branches one at Mumbai and the other at Bengaluru. The gallery is a repository of the cultural ethos of the country and showcases the changing art forms through the passage of the last hundred and fifty years starting from about 1857 in the field of Visual and Plastic arts. Notwithstanding some gaps and some trivia, the NGMA collection today is undeniably the most significant

collection of modern and contemporary art in the country today. The link for virtual tour of museum is http://www.ngmaindia.gov.in/index.asp

- **The Victoria Memorial Hall (Estd.:1921): It** is one of the most magnificent monuments of not only the city of Calcutta but of our entire country. Representing the resplendent and majestic British architecture, Victoria Memorial Hall stands today, as a veritable icon of the city of Kolkata. It was envisaged by Lord Curzon, the Viceroy of British India, as a memorial to the deceased Queen Victoria. Hence, according to Curzon it was erected on the Calcutta maidan to serve primarily as a monument to the Queen and secondarily as a national gallery and Valhalla of the Indian Empire. The national gallery in the shape of a museum is on Indo-British history of the eighteenth, nineteenth and twentieth centuries. King George V, the then Prince of Wales, laid the foundation stone on January 4, 1906 and it was formally opened to the public in 1921. It functions as the premier art gallery, museum, research library on art history and museum studies, and cultural space in the city of Kolkata. In order to pursue this mission, it collects, conserves and disseminates knowledge among the general public about art objects, historical relics, and documents relating mainly to Indian history in the eighteenth, nineteenth and twentieth centuries. In addition to the exhibits on permanent display, the Victoria Memorial Hall also organizes regular special exhibitions, lectures, publications, cultural programmes and interactive educational activities – both on-site and in different parts of India and abroad – in its four focal areas of activity, namely, art, culture, heritage and the environment. It promotes research through its research fellowships and library resources, networks extensively with other museums, historical societies and the academia, and seeks to promote positive social change through its outreach activities with non-museum organizations and community groups. It is recognized by the wider community – as a museum without walls. The link for virtual tour of museum is http://www.victoriamemorial-cal.org.

- **The Indian Museum (Estd.:1814):** The origin and growth of the Indian Museum initiated back to the last quarter of the 18th century when Sir William Jones a profound scholar devoted his life to the service of India, founded the Asiatic Society in 1784 in Kolkata. The role of the Asiatic Society was to form a learning centre for the development of art and culture pertaining to the socio-cultural activities, entertaining people, disseminating knowledge and preserving the cultural as well as natural heritage of mankind for posterity within the geographical limits of Asia. In 1796 the members of the Asiatic Society conceived an idea of establishing a Museum at a suitable place for the reception and preservation of the objects whatever it is performed by man or produced by nature. The idea got shape in the beginning of 1808 when society found itself in a position to occupy its premises erected at the corner of Park Street on a land granted by the Government. Consequently ,under the guidance of Dr Nathanial Wallich a museum was established in 1814 at the Asiatic Society. Indian Museum is the earliest and the largest multipurpose Museum not only in the Indian subcontinent but also in the Asia-Pacific region of the world. Interesting and curious objects were collected from various parts of the country. In the beginning Indian Museum was opened with two galleries later on it was transformed into a multipurpose Institution where multi-disciplinary objects have been displayed in its six sections, viz. Art, Archaeology, Anthropology, Zoology, Geology, and Botany. The museum was known as the "Asiatic Society Museum" in the beginning, subsequently came to be known as the "Imperial Museum" later familiarized as the "Indian Museum". The museum has developed into the largest institution of its kind of the country having three main cultural sections namely, Art, Archaeology, and Anthropology together with eight co-ordinating service units such as Preservation, Publication, Photography, Presentation, Education, Library, and Security. The link for virtual tour of museum is https://indianmuseumkolkata.org

- **ASI Museum Ratnagiri (Estd.:1998):** The Buddhist relics of Ratnagiri was first brought to the notice of the scholars by Manmohan Chakravarti, the then sub-Divisional officer of Jajpur in the year 1906. Subsequently, Haran Chandra Chakaldar and Nirmal Kumar Bose explored the three hills of Lalitagiri, Udayagiri and Ratnagiri in the year 1928. Thereafter, scientific excavation was conducted in the year 1958 to 1961. From the sculptural and epigraphic remains it is evidenced that the earliest Buddhist establishment at Ratnagiri was about 5th century AD and continued up to 13th century AD. Then, it gradually lost its importance and deserted after some years. However, Buddhist activities continued in this area up to 16th century AD. Before the establishment of the museum, the antiquities were mostly kept at the excavated site in a store room which deserved their proper display for mass awareness and benefit of the public. Archaeological Survey of India took up the initiative to establish a museum for scientific and systematic display of antiquities. The construction of aesthetically planned three terraced magnificent building was completed in 1990 and after necessary arrangements the museum was opened to the public on 15th august, 1998. It has 3485 listed antiquities of which 238 are displayed in the museum galleries, corridor, back side veranda and in the front entrance of the museum. The museum consists of four big galleries with a long-stepped corridor displayed with various antiquities mainly related to tantric Buddhism. These are varied in nature and include small votive stupas, sculptures of different medium and dimensions in stone, bronze, ivory, copper and stone inscriptions, inscribed pot sherds, terracotta seals and sealings and others. The link for virtual tour of museum is http://www.ratnagirimuseum.com/museum

2.2: Related Researches:

2.2.1: Research Studies in India

Katiyar et al., (2016); conducted a research study on "Virtual Heritage: Combining Cultural Heritage and Virtual Reality". The investigator has focused on virtual

reality technology with reference to the young generation to put education in its proper perspective and makes it easy to signify the museum's goal that too in a briefer aspect. The idea was to It helps the young ones to gain knowledge and to make them realize about India as the oldest civilization. The main objective of the study was is to utilize virtual reality as technical methods to promote the chains of past and to furnish the history in a more global manner. To build a structure of the united Indian historical heritage that could be presented in virtual classrooms for the younger generations. The investigator endorses that the association of text along with this virtual world would provide better understanding of Indian cultural heritage and its growth of not just only a regional state but of the entire Indian subcontinent to younger minds. The finding of the study recommends that virtual reality could be used as a medium to map the cultural history of the nation and in doing so would influence the upcoming generations into better understanding of the historical dynamics of their great nation. Further, development could be made into the existing technology to improve the learning quality and experience in the future. It also submits that, currently use of JATAN software (in India) as a medium to portray the past and specialty of the exhibits although providing a 360-degree surround audio and 3D visualizations yet it somewhere fails to attract the visitors by lacking in that live and manipulative feel. Therefore, the destination managers can upgrade the concept of JATAN in the museums by replacing it with VR devices in order to revive the past in a live manner, which will result in a more meaningful and a detailed experience.

Shahnoor and Bhowal (2017); conducted an exploratory and descriptive in nature of study on " Virtual Tourism and Its Prospects for Assam". The purpose of this study was to examine the pros and cons of virtual tours and to analyse responses of tourists visiting Assam regarding virtual tourism. To obtained the findings both secondary sources including E-books, articles and websites, as well as partial primary data from tourists was obtained. total four hundred questionnaires were distributed among tourists who visited Assam, dividing the respondents into two categories; Domestic and Foreign. Amongst which two fifty questionnaires were distributed among Domestic tourists and one fifty

questionnaires were distributed among foreign tourists through snowball sampling technique. The findings of the study revealed that majority of the respondents in both the category were aware about virtual tourism websites as a means to communicate about the destination to tourists, considered that virtual tourism can be very effective for communicating with tourists of Assam as a tourism destination. Majority of domestic tourists believed that Pervasive Environments Architecture can be very effective for communicating with tourists of Assam as a tourism destination compared to the foreign tourists. Whereas as regarding pros and cons majority of the respondents opine that Hassle-free holidays, access to closed destinations, opportunity for disabled tourists, bringing the travel experience to those who are unable, or find it inconvenient, to travel because of physical handicaps or debilitating illnesses, support for sustainability and environmental conservation, avoiding visitor resentment by the native population and the deterioration of the natural environment and the habitats of native flora and fauna are the pros of the virtual tourism. While, lack of the "real experience" and "Limited reminiscence" are the cons of virtual tourism.

Bakre et al., (2017) ; conducted a study on "Campus Virtual Tour" with the objective to mimic real world by computer generated environment and engage all the senses of people using very powerful and compelling technology that is Virtual Reality. The study proposed development and implementation of virtual tour of Vidyalankar Institute of Technology using photo-stitching technique to enhance the popularity of college infrastructure and facilities provided in college. After evaluations of the prototype, for its easy of navigate with smooth functioning and consistency in all devices was released on Vidyalankar Institute of Technology's website with feedback form. Altogether 250 feedback forms were collected amongst which 96 forms were filled up by students and 154 were filed up by the parents. The majority of the visitors were of opinion that that the virtual tour enabled the them to view college campus from anywhere who could not visit campus physically due to location, transportation, time and resource restrictions. The tour was accessible from any appropriate device with proper internet

connections. The users could navigate through different prominent entities of college to learn more about the campus environment.

Ravikumar. J.S, et al., (2017); conducted a descriptive research study on " the effectiveness of Google virtual tour on business promotions". The aim of the study to critically evaluate the effectiveness of Google Virtual tour against the other promotional tool. A sample of 180 was selected through purposive sampling method. The findings of the study revealed that majority (84 %) of the respondents agreed that Google Virtual Tour is very important tool for promotion of business, its effective method of advertisement with affordable cost and it has increased the customer footfalls in their business and it is more effective and very helpful in customer tracking report. This study proved that Google Virtual Tour is very effective in promoting a business and plays very significant role in the field of digital marketing.

Vishwakarma et al., (2019); researched on **"**Antecedents of Adoption of Virtual Reality in Experiencing Destination: A Study on the Indian Consumers". The study examined the antecedents of adoption of Virtual Reality among the Indian tourists using the Technology Acceptance Model (TAM). Perceived enjoyment and perceived immersion had been added to the TAM model as two additional antecedents, and their interrelationships and impacts on tourist's intention to adopt virtual reality were examined. Structural equation modelling was used to analyze the responses obtained using online method from 259 respondents. The findings of the present study contribute to the literature by analyzing the application of virtual reality in the tourism industry. The study revealed that the adopted TAM model with the inclusion of variables like perceived enjoyment and perceived immersion to examine their impact of the construct perceived immersion on the adoption of virtual reality for evaluating tourist destinations by the Indian tourists was found to be significant. The study indicates that the perceived immersion is a significant predictor of perceived enjoyment during virtual reality experience, the level of perceived enjoyment has a positive influence on the usefulness of virtual

reality and perceived ease of use has the most significant impact on the intention to use virtual reality.

Shimray (2019); conducted a study on **"**Ways to Create Awareness on Cultural Heritage: An overview". The purpose of this study is to examine the various ways to create awareness and facilitate general awareness on cultural heritage. The study endorses that creating awareness and promotion of the cultural heritage is a decisive subject to make the general public understands the pressing need for cultural heritage knowledge acquisition, promotion and dissemination. Cultural heritage studies should be incorporated in school education at an early stage so that they feel concerned about the promotion and preservation of cultural heritage. It is essential to cultivate the segment with the assistance from the government, non-governmental organization and entrepreneurs. More operational support, corporation and active involvement from the public is required to fulfil in creating awareness on cultural heritage. Further, heritage festivals, freedom walk, heritage trails, heritage walk, heritage awards, street plays, heritage newspapers and promotion of heritage in education are the prominent tools to create awareness.

Vasavada, M, et al., (2019), conducted "A conceptual study on sustainability and preservation of Indian cultural heritage concerning Heritage City Ahmedabad". The study focuses on an approach towards conservation and sustainability of the heritage and cultural value of India with reference to The Heritage City – Ahmedabad. The major area of concern to put into light was that the pride that India and Indians holds in possession of the heritage value have been mentioned and discussed across the world but there has been no research papers of findings that suggest the sustainability of the heritage and culture and the heritage value as it is of enormous importance that this heritage value must be conserved, promote and sustained so as to maintain the pride of the nation and also for conserving the experience for the generations to come. The study recommend that the preservation of culture and heritage can be encouraged by spreading awareness about the real worth of preserving the heritage, holding campaigns and consulting government for conduction of proper norms to avoid harming the

monuments and depletion of cultural values furthermore the education forums can be conducted and used as a medium to educate people and disseminate importance of sustainability of heritage and culture.

Karim et al., (2019); steered **"**A Conceptual Study on India's first heritage city Ahmedabad with Reference to Heritage Walk-A Tourist Attraction". The walk commences from the early 19th century Swaminarayan temple Kalupur, encompasses 20 main spots besides numerous areas and aspects of the old city and concludes at the famous 15th century Jama Masjid. Hence the Walk is popularly known as the journey of 'Mandir to Masjid'. The exploratory study suggests various promotional strategies that can be implemented through heritage walk to promote heritage city Ahmedabad which includes 1) Direct contract with travel agency, tour operators, hotels, embassies, government stays etc., 2) Direct contract with Corporate Sectors, School and College. 3) By word of mouth. 4) Through online booking and website and mobile applications. 5) Through advertisement in paper, magazine, journals, cable network, TV, Cinema halls, banner's etc. 6) Linkage and collaboration with Travel Agency / Tour Operators and Hotels. 7) Publication of pamphlets, handouts, display, brochure, digital boards. 8) By printing T-Shirts, Cap's, Wrist Bands, Bag's etc. 9) Organizing lectures of prominent personalities like art and architectural experts, historians, scientists, environmentalists, travel and tourism fairs etc. 10) Creation of blog, posts, short video clips on social media, emails etc.

2.2.2: Research Studies in Abroad

Pia, T, (2017); conducted research on "Virtual Reality in destination Marketing". The purpose of the study was to find the current attitudes towards virtual reality among tourism industry and travelers, and that ways get a clue about future of virtual reality in the tourism branch. The research as a whole was conducted during July-August 2017 in Finland. A questionnaire for travelers was shared on researcher's own Facebook page on which altogether hundred twenty-three answers were received. The finding of the study revealed that the travelers are interested in all kinds of visual information provided about the destination. Thus, it

is worthwhile for destination and attraction marketers to consider adding virtual reality to the promotional mix planned for the destination. It can persuade the curious travelers in events. It is easy to promote new destination and attract especially the very active travelers, as the numbers of virtual reality Equipment in user's homes will seemingly rise soon, which will eventually offer a good chance for marketers to provides content for the audience.

Kersten, et al., (2017) conducted a study on " Development of A Virtual Museum Including A 4D Presentation of Building History in Virtual Reality ". The main objective of the study was development and implementation of a Virtual Museum for the museum "Old Segeberg town house" with two options: a) interactive software application for windows-based computer systems and b) virtual reality application for the virtual reality system HTC Vive. Therefore, the Old-Segeberg town house of 475 years of architectural development, were identified and explained in form of animations, which were the highlights of the virtual museum. The developed computer program contained thirteen guided viewpoints distributed at important positions in the museum and fifty-two info menus with detailed information for visiting the virtual museum. The program had a size of 500 M. Byte and was executable as a standalone program on Windows operating systems. It was developed in the game engine unreal, which offered, complex visualizations of 3D objects and provided programming tool necessary for creating extensive interactions between the user and the environment. To make this program accessible for the visitors, a PC-terminal was provided in the Old-Segeberg town house. The findings of the study revealed that developed entirely in 3D, the virtual museum is unique in Germany as an informative component of a museum. The Virtual Museum application using the HTC Vive provided visitors the opportunity to check the geometric quality of the modelled 3D data during the virtual museum visualization. Walking through the virtual museum of the Old-Segeberg town house, collecting all of the information in the exhibition and seeing all of the different animations, which explain the construction changes of the building over the centuries, was a very immersive experience for the visitors. It was concluded that the emerging technology offers great potential by combining the advantages

of a virtual museum with the real museum visit. It enabled the museum visit in situ using a Smartphone or tablet for digital sperm position of the current state with a historic building state.

Ferrari, et al., (2017); steered a project on "The virtual experience for cultural heritage: Methods and Tools comparison for Geguti Palace in Kutaisi, Georgia". The virtual experience of Geguti palace was presented in the study to demonstrate how it is possible to offer a deep understanding of space from abroad by absorbing reality into a virtual environment. The joint research activities on Geguti Palace were performed by two Universities and the National Agency for Cultural Heritage Preservation of Georgia. An Immersive virtual tour was structured to guide users through Geguti Palace, adding information from the historical, cultural and geographic point of view. A 360° video with textual and graphic information was developed on a spherical photographic description of the reality and guide you through the archaeological site of Geguti Palace, telling its story and the history of Georgian Dynasties. The main strategy carried out with 360° video was to immerse the user into a virtual space and let him follow the narration without any instruction on using Virtual reality devices. The data collected during the survey clearly depicted that Virtual reality are easy to use on smart gadgets and provide immersive experience. While testing both the immersive Virtual reality technology and the ease of use of the devices. Most of the time, users were able to easily enjoy the Virtual reality experience. From the very first seconds, users were moving freely into the virtual space. It was deeply impressing the immersive experience of pre-school children, who often needed compare the reality with the virtual environment. The experience has shown how Virtual reality technology can be very successful both in the edutainment sector as well as in the teaching one.

Kim et al., (2018); conducted research on "Exploring Consumer Behavior in Virtual Reality Tourism using an extended Stimulus-Organism-Response Model." The purpose of the study was to developed a theoretical framework including authentic, experience, cognitive, and affective responses, attachment, and visit intention with virtual reality tourism using a Stimulus-Organism-Response theory. The validated

multi-measurement items for the questionnaire were utilized. The survey questionnaire included 27 items and seven constructs: authentic experience, cognitive response, enjoyment, emotional involvement, flow state, attachment to virtual reality, and visit intention in virtual reality tourism settings and were assessed on a 7-point Likert-type scale. The finding of the study revealed the highly significant impact of consumers' authentic experience on their cognitive and affective responses to virtual reality tourism experiences, indicating that authentic experience with tourism-related virtual reality activities is one of the key factors in the commercialization of virtual reality. Moreover, consumers' cognitive response to tourism-related virtual reality activities contributes to their affective response to virtual reality tourism experiences. Additionally, this study identified potential visitors' cognitive and affective responses to virtual reality tourism experiences as significant mediators in predicting attachment to virtual reality tourism experiences and visit intention to the destination presented in virtual reality. The results further demonstrated that consumers' intention to visit the destination shown in the virtual reality tourism content was influenced by their attachment to virtual reality tourism experiences. In addition, the results suggest that affective responses to tourism-related virtual reality experiences fundamentally consisted of enjoyment, emotional involvement, and flow state. This study sheds light on why potential tourists want to visit the destinations shown in virtual reality tourism activities and provides implications for academics and practitioners.

Rainoldi, et al., (2018); conducted experimental research on "Virtual Reality: An Innovative Tool in Destinations' Marketing" purpose of the study was to investigate a destination's promotional material by analyzing and comparing a self-designed brochure with an existing Virtual Reality video of the city of Dubrovnik, Croatia. A total of 101 experiments were conducted at Fanchhochashule Salzburg and Unipark Nonntal. The finding of the study shown that Virtual Reality transforms the information search experience into faster, more interactive, and more detailed process compared to traditional promotional materials.

Beck et al., (2019); conducted theoretical research on "Virtual Reality in tourism: a state- of- the art review". The purpose of the study was to analyze Virtual Reality researches in tourism and to provide a comprehensive state of the arts review. Virtual Reality systems with different capabilities, this study aimed to provide a systematic and structure overview. The overall objective of the study was to contribute to an understanding of Virtual Reality research in tourism. This study comprehensively reviewed and analyzed existing literature on Virtual Reality in tourism, published from 1994 to February 2019. Using a wide variety of sources, these studies were examined so as to give a state-of-the-art literature review and to deepen one's understanding of the diverse applications of virtual reality in a tourism context. The finding of the study endorsed that virtual reality is rapidly becoming a creator of new tourism experiences aiming as sources of information, entertainments, education, accessibility and heritage preservation.

Pestek & Sarvan (2020); conducted exploratory research on "Virtual Reality and Modern Tourism." The purpose of the research was to provide an insight as to how recent trends in virtual reality have changed the way tourism and hospitality industry communicates their offering and meets the tourists' needs. This study conducted in Herzegovina. The approached is based on systematic literature review, where the relations between focal concepts are given to analyze potential future developments concerning virtual reality. The finding of the study identifies and analyzes that virtual reality technology has affected tourism and hospitality industry through three min touch point- future tourism planning and management, technology-based marketing of identify changing forces and suggest potential paradigm shifts that tourism and hospitality suppliers and marketers need to consider. These included realistic virtual travel replacements, the importance of interactive experiences and innovation in future tourism systems.

Resario, et al., (2020); conducted a study on "The impact of virtual reality technology on tourists' experience: a textual data analysis". The study focused on the quality of experience lived by tourists while visiting a cultural heritage destination by using a tourist product based on the virtual tour. The research is

justified by the increased demand by tourists to have a memorable experience in a destination as well as the growing offer on virtual reality and augmented reality technologies applied to the tourism sector. A total of 119 online comments on the tourist experience after the use of the past view smart glasses and posted in the eWOM community trip advisor found to be valid were analyzed. The result depicted that virtual reality technologies influence tourist quality of experience. The findings drawn from the empirical analysis provide destination marketing organizations suitable and useful information to promote the destination and therefore in tourism sectors to attend to the desire of tourists to have a memorable tourist experience.

Ren (2020); conducted a study on "Evaluation of the Online Virtual Reality 360° World Cultural Heritage Tourism under the Charter on Interpretation and Presentation of Cultural Heritage during the Covid-2019 Outbreak". The study was formulated on evaluation framework for the interpretation and presentation performance of Online virtual reality 360°world cultural heritage tourism (OVRWCHT) approach during the covid-2019 break. The research framework was based on seven main principles of the Charter of the World Cultural Heritage Interpretation and Presentation theory, and establishes evaluation criteria for each principle. The methodology of the study mainly consists of three components. The first part is to select a World Cultural Heritage as a case study, and customize the OVRWCHT for it. The second part is to establish the OVRWCHT evaluation framework. The third part is to applying the case to evaluation framework with the support data of a questionnaire survey the Online virtual reality 360° system was for this site was established and evaluated accordingly. Therefore, The World Cultural Heritage Site Hailongtun Tusi was selected as the case study. An online 1062 effective questionnaires were collected and analyzed. The results revealed that, whether in terms of users' experience or interpretation of outstanding universal value, the OVRWCHT is a three-dimensional heritage interpretation and presentation technology made by the research team which has received relatively wide recognition from stakeholders during the COVID2019 outbreak period. According to the research framework, OVRWCHT generally conforms to the seven interpretation and presentation principles namely Principle 1: Assessment and
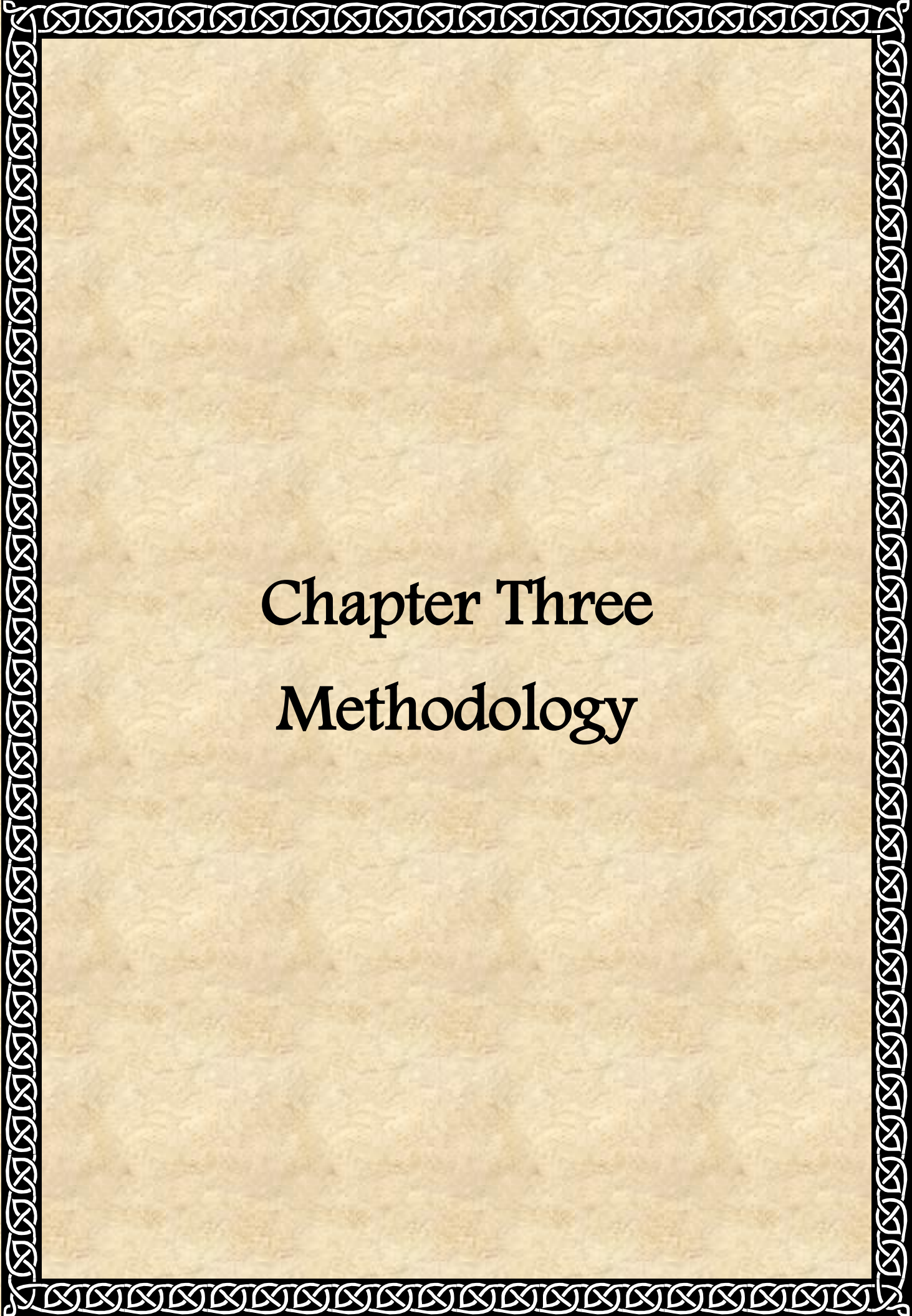
Understanding, Principle 2: Information Sources, Principle 3: Context and Setting, Principle 4: Authenticity, Principle 5: Sustainability, Principle 6: Inclusiveness, and Principle 7: Research, Training, and Evaluation. Panoramic 3D can be used as one of the important ways of heritage presentation and interpretation during the epidemic. Emerging technologies such as artificial intelligence and 3D visualization have significant advantages over traditional technologies in this field.

Christos Kyrlitsias (2020), conducted a study on **"**A Virtual Tour of a Hardly Accessible Archaeological Site: The Effect of Immersive Virtual Reality on User Experience, Learning and Attitude Change". The research study focuses on archaeological sites are not easily accessible by visitors due to mobility or geographical restrictions. Digital technology can make such sites virtually accessible and provide educational information at the same time. Toward this goal, investigator created a digital reconstruction of the archaeological site of Choirokoitia. In which, an interactive application with different technologies, was designed and developed, where users can navigate and get information about the site, for two different systems: Virtual Reality systems and desktop computers. A feasibility study was conducted where the aspects of the two systems were compared so as to allow the suggestion of the proper technology to utilize according to a user's aims. The results showed higher levels of presence and more positive experience by the participants who used the Virtual Reality system compared to those who used the desktop version. On the other hand, greater learning gains were demonstrated in participants who used the desktop version compared to those who used the Virtual Reality version. No differences were shown between the two groups regarding the participants' change of attitudes toward the archaeology of Cyprus.

2.3: Conclusion of Review of Literature

The review of literature highlighted that with the advancement of technology in the field of visual analytics the study of ancient artefacts and structures could be conducted in a sophisticated manner with highly accurate descriptions and reality-based models. India is a land of vast cultural heritage. This heritage is in the form

of structures and artefacts and is distributed throughout the nation. With the help of virtual reality these architectural and stored heritage could be mapped and the information can be represented on digital devices to help the younger generations understand the heritage of not just their localized states but of the entire nation. Virtual reality is rapidly becoming a creator of new tourism experiences aiming as a source of information, entertainment, education, accessibility and heritage preservation. At the same time, the technological development of virtual reality, in all its forms, provides opportunities for destinations, hospitality business and attractions along all phases of the customers' journey. However, during review of literature in Indian context, it was found that the Ministry of Tourism, Government of India and other privet corporate house have attempted to developed virtual tours but a limited study were found related to development of virtual tour ant its efficacy. While reviewing the literature in context to abroad, significant researches are conducted related to virtual reality. However, it was difficult for investigator to find out developed 360˚ panoramic virtual tour of any educational heritage destination or related researches. Since, Vadodara has a significant educational heritage hub established by Maharaja Sayajirao Geakwad -III, the present research area was thought to be the most significant and unexplored was taken for the present study.

Chapter Three

Methodology

CHAPTER III

METHODOLOGY

The purpose of the research is to discover an answer to the question through the application of scientific procedures. A research methodology is a science of studying how research is done systematically and scientifically (Kothari, 2012). The present chapter deals with the methodological procedure adopted for the present investigation. To facilitate systematic presentation, the chapter is divided into various sections which are explicitly described here:

3.1. Research design

3.2. Operational definition

3.3. Conceptual framework of the study

3.4. Locale of the study

3.5. Unit of inquiry

3.6. Sample size and sampling procedure

3.7. Development of Virtual Tour and Narrations

3.8. Construction and description of the tool

3.9. Establishment of content validity of the tool

3.10. Data collection

3.11. Data analysis

3.1. Research Design

Research design is the framework of research methods and techniques chosen for investigation conceived to obtain an answer to research questions and control variance. It is the complete strategy that is adapted to integrate the different components of the study coherently and logically, thereby, ensuring an effective method to address the research problem. It constitutes the blueprint for the collection, measurement and analysis of data (Marry,1967).

A descriptive research design study describes and interprets "what is". It is concerned with condition or relationship that exist, opinions that are held, process that is going on, evident effects, or trends that are developing. It is primarily concerned with the present, although it is often considered past events and influence as they relate to the current condition (Best and Kahn, 2006).

The present study aims to assess the users' satisfaction regarding developed virtual tour and narrations for a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara. Therefore, the descriptive research design was considered the most appropriate. To reach the objective of the study an exhaustive plan of work and consecutive procedures adopted are explained here.

3.2. Operational Definitions

3.2.1. Educational Heritage Hubs: For the present study the Educational Heritage Hubs referred to those which were established by His Highness Maharaja Sayajirao Gaekwad-III for educational purpose and has a legacy of minimum 80 years.

3.2.2. Virtual Tour: For the present study a virtual tour comprised of the sequence of panoramic images that were 'stitched' together using Photoshop software to create a 'virtual' experience of a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara, which also included sound effects such as music and narration. This virtual experience could be viewed through desktop computers, laptops, tablets and mobile devices.

3.2.3. Extent of respondent's satisfaction for the selected aspects of Virtual Tour: For the present study, the extent of users' satisfaction for the virtual tour was operationally defined as the extent to which the tourist feels contended with the selected aspects of virtual tour developed for a selected Educational Heritage Hubs established by

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His Highness Maharaja Sayajirao Gaekwad III in Central City, Vadodara, Gujarat. The aspects of the virtual tour included 1) Visual Attributes, 2) Technological Feature, 3) Voice Quality of Narration, 4) Content of Narration of the Spots and overall satisfaction of users' regarding the virtual tour.

The extent of users' satisfaction for each selected aspects of a virtual tour was measured on the "Users' Satisfaction Scale" (Summated Rating Scale) on a 5-point continuum. The responses of "Very Satisfied", "Satisfied", "Neutral", "Dissatisfied" and Very "Dissatisfied" were ascribed scores of 5, 4, 3, 2 and 1 for the positive statements and vice versa for the negative statements. Higher scores indicated a high extent of satisfaction.

3.3 Conceptual Framework of the Study

Variables under the Study

Variables are the conditions or the characteristics that the experimenter manipulates, controls or observes. The variable that is antecedent to the dependent variable is termed as "Independent Variable". Accordingly, the variable that depends upon or is a consequence of the other variable is termed as "Dependent Variable" (Kothari, 2012).

Independents Variables:

1. **Users' Personal Variables:**
   - Gender
   - Education
2. **Situational Variable:**
   - Type of gadget used

Dependent Variables:

- The extent of users' satisfaction regarding virtual tour developed for Educational Heritage Hubs Established by His Highness Maharaja Sayajirao Gaekwad- III in Central City, Vadodara.

Independents Variables	Dependent Variables
1. **Users' Personal Variables:** • Gender • Education 2. **Situational Variable:** • Type of gadget used	**The Extent of users' Satisfaction Regarding Aspects of Virtual Tour**
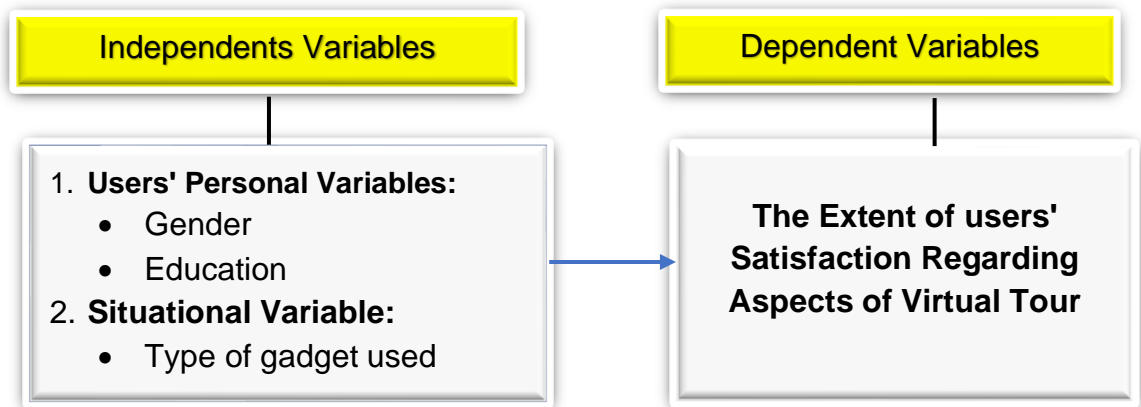
Fig 22. Schematic diagram showing the hypothetical relationship between the variables selected for the study

Explanation of the Conceptual Framework

The conceptual framework shows that the users' independent variables (personal variables) viz; gender and education and (situational variable) types of gadget use, affects the extent of satisfaction regarding the selected aspects of developed virtual tour and eventually on the overall satisfaction experienced by the users for the selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

3.4. Locale of the study:

The present study was conducted in the Department of FCRM, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, S.M. Patel College of Home Science, Charutar Vidya Mandal University & Sardar Patel University, Vallabh Vidyanagar, C Z Patel College of Business and Management, Charutar Vidya Mandal University, Vallabh Vidyanagar and Indian Institute of Travel and Tourism Management, Noida where subject related to travel and tourism field is offered.

3.5. Unit of inquiry

The present study was conducted amongst the students who were above 19 years from the Department of FCRM, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, S.M. Patel College of Home Science, Charutar Vidya Mandal University & Sardar Patel University, Vallabh Vidyanagar, C.Z. Patel College of Business and Management, Charutar Vidya Mandal University, Vallabh Vidyanagar and Indian Institute of Travel and Tourism Management, Noida where subject related to travel and tourism field is offered.

3.6. Sample size and sampling procedure

3.6.1. Selection criteria for the Educational Heritage Hubs in Central City, Vadodara.

For the present study, the criteria set for the selection of the Educational Heritage Hubs were as follow:

1. The Educational Heritage Hubs should be in the Central City of Vadodara.
2. The Educational Heritage Hubs should be established by His Highness Maharaja Sayajirao Gaekwad-III and have a legacy of at least 86 years.

3.6.2. Selection criteria for the Users

For the present study, the criteria set for the selection of the users were as follows:

1. The users should be above 19 years of age.
2. The users should be studying travel and tourism subjects in the various universities and institutions of India.
3. The users should know the English language as the narrations developed was in the English language.
4. The users should willingly participate in the research study.

3.6.3. Sample size

The sample size for the present study was restricted to 120 users', where, all the selected samples experienced the virtual tour.

3.6.4. Sampling procedure for Educational Heritage Hubs and Users'.

1. For the present study, the purposive sampling technique was used for the selection of Educational Heritage Hubs and Users'. Under this procedure amongst the various Educational Hubs in the Central City, Vadodara only those Educational Hubs were selected purposively for the study, which was established by His Highness Maharaja Sayajirao Gaekwad-III and has a legacy of minimum 80 years.

2. For the selection of the users, purposively those were selected who were above 19 years in age, could understand the English language, as the narrations developed were in the English language, studying subjects related to travel and tourism field in the universities or institutions of India and were willing to participate in the research study.

3.7. Development of 360' Virtual Tour with Narrations

One of the prime objectives of the present investigation was to develop a 360' Virtual Tour for selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad- III in Central City, Vadodara and to develop Narrations for the selected spots. Hence, to achieve this objective, the investigator collected and synthesized the information about the selected Educational Heritage Hubs to identify and enlist potential spots that could be included in the 360' Virtual tour.

3.7.1 Development of 360' Virtual Tour: The development of 360^{0} virtual tour comprised of the sequence of panoramic images that were 'stitched' together using Photoshop software to create a 'virtual' experience of a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara which also included sound effects such as music and narration. The developed virtual tour experience could be viewed through desktop computers, laptops,

tablets and mobile devices. The virtual tour was developed with the help of the technical expert.

3.7.2. Developing Narrations of the Virtual Tour: Narrations enriches the virtual tour, allowing visitors to gain more comprehensive knowledge about each heritage asset. To develop the narrations of the selected Educational Heritage Hubs, the relevant literature was procured from the library, social media platforms and the authorities of the selected Educational Heritage Hubs. The collected facts and information were synthesized and transcribed in the form of narrations by the investigator. Future, the developed narrations were validated by the authorities of the selected Educational Heritage Hubs. Then the validated content of narrations was recorded in the studio with the help of technical experts and subsequently, the background music was also mixed. These narrations were then used in a virtual tour.

3.8. Construction and description of the tool

The exhaustive review of the literature surveyed helped the researcher to select and prepare the required tool to facilitate data collection for the present research study.

3.8.1. Selection of the data collection tool

For the present study google form was considered to be the most suitable tool for data collection as It is a free online tool, that allows collecting information easily and efficiently across the globe. The Google forms are useful to create surveys in a few minutes regarding the experience of the users about the virtual tour. It was also thought to be the safest way of data collection in this pandemic situation of Covid-19.

3.8.2. Development and description of the tool

The tool was constructed in compliance with the objectives of the study. The information sought in an interview schedule was divided into the following sections:
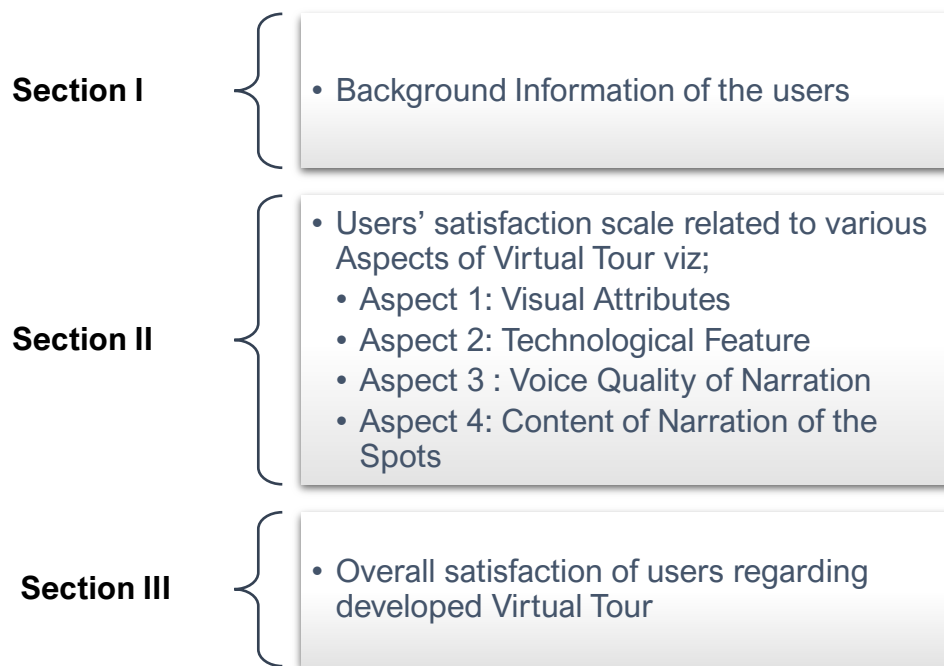
Fig. 23. Description of the Interview Schedule

Section I: Background Information of the users':

This section contained questions regarding the background information like name, residence, gender, education and respective gadget used by the users' selected as users.

Section II & III: "Users' Satisfaction Scale" regarding various aspects of Virtual Tour

Section-II, comprised of 32 items regarding various aspects of virtual tour viz; Visuals, Technological Features and Narrations developed for a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad- III in Central City, Vadodara. Similarly, section-III comprises of statement related to overall satisfaction regarding virtual tour comprised of 14 items. All together total of 46 items were developed in form of positive and negative statements to measure the extent of users'' satisfaction regarding the selected aspects of the virtual tour. The description of the aspects and count of the item under each aspect are as follow:

Sr. No.	Aspects of Virtual Tour	No. of Items
1.	Visual Attributes	6
2.	Technology Feature	6
3.	Voice Quality of Narration	8
4.	Content of Narration of the spots	7
5.	Overall Satisfaction of users' Regarding Virtual Tour	11
	Total Items	**38**

3.9. Establishment of content validity of the tool

To establish the content validity of the data collection tool, it was given to a panel of 11 judges comprising the experts from the Travel and Tourism Industry, Faculty of Family and Community Sciences. The judges were requested to judge whether the listed items under each aspect were clear or ambiguous and relevant or irrelevant. Based on the valuable suggestions given by the experts, the tool was modified and finalized for the data collection.

3.10. Data collection

To find out users' satisfaction regarding aspects of virtual tour developed for a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad- III in Central City, Vadodara, the users' who were above 19 years, understood the English language, studying travel and tourism subject and were willing to participate in the research study, were exposed to virtual tour followed with data collection through google form by the investigator. Various aspects and terminologies used in google form were explained to the users in Virtual Classroom using Microsoft Team and Zoom platform.

3.11. Data analysis

The data analyzing procedure comprised of categorization of the data, coding, tabulation and statistical analysis.

Categorization of Data

Section I: Background Information

1. **Gender**
   - Male
   - Female

2. **Educational level**
   - Graduation
   - Diploma
   - Post-Graduation
   - PhD

3. **Gadgets use to participate in the virtual tour**
   - Smartphone
   - Laptop
   - Tab
   - Virtual Reality Headset

Section II and III: Pattern of response and categorization of users' satisfaction scale regarding selected aspects of Virtual Tour developed for a selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad- III in Central City, Vadodara, Gujarat.

The pattern of Response: To gather the information about users' satisfaction regarding the selected aspects of developed Virtual Tour, the response pattern of the scale was as follow:

Response	The score for Positive items	The score for Negative items
Very Satisfied	5	1
Satisfied	4	2
Neutral	3	3
Dissatisfied	2	4
Very Dissatisfied	1	5

Users' Satisfaction Scale for selected aspects of 'Virtual Tour'

To measure the users' satisfaction for the selected aspects of the virtual tour, a scale containing 38 statements was developed in a form of positive and negative statements. The possible minimum and maximum score under each aspect were obtained and a range of score was developed based on the equal interval method to express the extent of satisfaction of users about various aspects of the virtual tour.

The extent of Satisfaction for Aspects related to Virtual Tour	Range of Score
Aspect 1: Visual Attributes	
The Low Extent of Satisfaction	6 – 13
The Moderate Extent of Satisfaction	14 – 21
The High Extent of Satisfaction	22 – 30
Aspect 2: Technology Feature	
The Low Extent of Satisfaction	6 – 13
The Moderate Extent of Satisfaction	14 – 21
The High Extent of Satisfaction	22 – 30
Aspect 3: Voice Quality of Narration	
The Low Extent of Satisfaction	8 – 18
The Moderate Extent of Satisfaction	19 – 29
The High Extent of Satisfaction	30 – 40
Aspect 4: Content of Narration of the Spots	
The Low Extent of Satisfaction	7-16
The Moderate Extent of Satisfaction	17-26
The High Extent of Satisfaction	27- 35

Overall Tourists Satisfaction Scale for the Selected Aspects of virtual tour based on Weighted Mean (1 – 5) divided into equal intervals

Strongly Dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly Satisfied
1 to 1.80	1.81 - 2.60	2.61 - 3.40	3:41 - 4:20	4:21 - 5:00

Overall Users' Satisfaction Scale For "Virtual Tour"	Range of Score
The Low Extent of Satisfaction	11-25
The Moderate Extent of Satisfaction	26-40
The High Extent of Satisfaction	41- 55

Overall Tourists Satisfaction Scale for the Virtual Tour based on Weighted Mean (1 – 3) divided into equal intervals

Overall Users' Satisfaction Scale for the Selected Aspects of Virtual Tour based on Weighted Mean (1 – 3) divided into equal intervals.		
Least Satisfied	**Moderately Satisfied**	**Highly Satisfied**
1.00 to 1.59	1.60 to 2.59	2.60 to 3.00

3.12. Statistical Analysis

The data were analyzed through the Statistical Package for Social Sciences (SPSS). Descriptive Statistics: The data were presented in frequencies, percentage and weighted mean and relational statistical analysis was carried out to test the hypothesis postulated for the study.

Personal Variables	Dependent Variables	Relational Statistics Applied
Education	Aspects of Virtual Tour	ANOVA
Gender	Aspects of Virtual Tour	t-test
Situational Variable		
Gadget used by the Users	Aspects of Virtual Tour	t-test
Gadget used by the Users	Aspects of Virtual Tour	Schiff test

Chapter Four

Findings and Discussions

CHAPTER IV

FINDING AND DISCUSSION

Finding and discussion is the most important chapter in a thesis as well as in any other types of research reports. The present chapter describes the analysis of data followed by the narration and discussion. For a systematic presentation, the chapter has been dividing into the following sections.

4. 1 Section I: Development of Virtual Tour

4. 2 Section II: Background Information of the Respondents

4. 3 Section III: Extent of Satisfaction Experienced by the Respondents regarding various aspects of Virtual Tour.

4. 4 Section IV: Extent of Overall Satisfaction of the Respondents regarding Virtual Tour.

4. 5 Section V: Testing of Hypothesis

4.1. Section I: Development of Virtual Tour

To fulfil the first objective of the research study the development of virtual tour, the process adopted by the investigator for developing virtual tour was divided into three phases is described as follows:

Phase I: Prerequisites and pre-preparation for the development of virtual tour:

1. **Inventory of potential educational Heritage Hubs to be included in the virtual tour:** This was the first and foremost exercise undertaking by the investigator that involved reviewing the literature available for the educational Heritage Hubs located in the central city, Vadodara. Based on the literature reviewed six significant educational Heritage Hubs were identified according to the criteria set for the selection of the educational Heritage Hubs for the present study viz; 1) The educational heritage hub should be in the central city of Vadodara 2) The educational heritage hub should be established by His Highness Maharaja Sayajirao Gaekwad-III and have a legacy of at least 86 years.

2. **Visiting of the identified educational Heritage Hubs:** After the selection of significant educational Heritage Hubs, the investigator personally visited all the respective authorities of selected spots for seeking permission for taking 360˚panoramic photographs.

Phase II: Development of virtual tour for the selected educational Heritage Hubs

1. **360˚Panoramic Photography:** After obtaining the permission 360˚panoramic photographs were taken of all the selected spots with the help of the technical external agency.

2. **Development of Narrations:** Narrations for each heritage hub was developed based on the literature available on social media and Sayaji Prathisthan. Subsequently, the narrations were prepared it was given for validation to the concerned authorities of respective spots. The validated content which was developed in form of narrations for each spot and was used for voice over is described as follows.

Central City of Vadodara

India's one of the top Educational Heritage Hub established by His Highness Maharaja Sayajirao Gaekwad-III is located within the central city of Vadodara. So, we will be covering the 6 educational hubs of the time which is still preserved and has continued the so-called legacy of Maharaja Sayajirao Gaekwad-III. Let's get back to the year 1882 AD when independence for women was a nightmare. It was his vision to provide basic education and make the women of the state independent, which resulted in the establishment of 'Stree Adhyapan Pathshala' 136 years back.

Spot 1: Stree Adhyapan Pathshala

Year of Establishment: 1882 AD - Legacy of 138 Years

Outside Area: The Stree Adhyapan Pathshala was also known as Zenana school and is located next to Lal Court, nearby Sursagar Lake in the Centre of Vadodara City. Let's have a quick look at the structure of the ancient building which is 138 years old and was designed with exposed bricks along with stained glasses. Today, it is known as

Sarkari Buniyadi Stree Adhyapan Mandir. The building consists of 3 floors, where the ground & the first floor occupies 15 rooms and the second floor have 5 rooms. If we look back in history, Baroda had faced massive rainfall and floods many times. Therefore, the Maharaja had built the Stree Adhyapan Pathshala on a higher area of the central city of Vadodara. The pathshala has a hostel facility also which can accommodate 48 female scholars at a time.

Inside Area: The internal design is been made by using bricks and teak wood. Well, today, this exposed brick building has been plastered and therefore its heritage look has been destroyed, except its wooden windows and stairs. At present, the institution offers a Diploma in Elementary Education (PTC) in Gujarati and Marathi medium. Friends, that's all for the Legacy of 138 years of the Stree Adhyapan Pathsahala building.

Outreach Programs: Zenana had also started classes for imparting education of reading, writing, and household accounts to such women who were not able to attend school, along with this, embroidery, drawing and practical cookery were also taught. Varied topics of personal importance, such as sanitation and hygiene helped in bringing up other household and public affairs to the children. The Maharaja also made physical training compulsory in Baroda city and girls were not exempted from that. His main vision was to give independence to the girls for uplifting their mental and physical strength. The main objective of the Maharaja behind starting this college was to train, educate, and empower women so that they can become independent in the late 19 century. A rare fact that few people know that this girl's school was also associated with the college.

Spot 2: Faculty of Performing Arts

Year of Establishment: 1886 AD-Legacy of 134 Years

Outside area: Faculty of Performing Arts which has a Legacy of 134 years and it is a reason for which the Vadodara city is also known as 'Cultural Heritage'. Vadodara has witnessed many cultural shows and events right from history. Regarding the history of the Faculty of

Performing Arts, it was Sangeet Ratna Maula Bakhsh who founded the Music School in 1886 and worked as a Principal. At present, the Music School house is known as the Faculty of Performing Arts, which is located near Sursagar Lake. This was the grand and elegant history of the Faculty of Performing Arts.

Let's have a look at the structure which is a Roughly "T" shaped building. It shows the style of architecture that can be called an amalgamation of the regional wooden architecture and the colonial style prevalent at that time. Just like the other building of the time, this building also shows the exposed brickwork on the facade. But unlike the Indo-Saracenic elements such as the arches and stone work, the wood work has been given more emphasis. The double-storied structure feature, coupled wooden posts with elaborately carved brackets on the ground floor while the upper story features a series of wooden balconies resting on these posts. The structure also features a tall tower in the centre that overlooks the whole locality. The most beautiful element of the building is the "Jharokha" window carved out of a stone and can be called a replica of the jharokha in the Bhadra kacheri. At present, the exposed brickwork has been painted over, and the wooden elements are available in a queer shade of blue.

Inside area: Sir William Emerson had designed this unique faculty, which is one of its kinds in western India. The institute receives students from various countries of the world, such as the USA, Nepal, Japan, and Mauritius. This school of "Indian Classical Music" was led by Mr. Fredis, a Russian Jew and the manager of Baroda State Band. Many famous artists have been associated with the college as teaching staff, such as - Ustad Atta Hussian 'Ratanpiya', Ustad Nissar Inayat Khan and Gayanacharya Pandit Madhusudan Joshi. The renowned Musicologist - Pandit V. N. Bhatkahande led the first historic Music Conference of united India in the year 1916 which was hosted by the department under the patronage of Maharaja Sayajirao Gaekwad-III and attended by 400 stalwarts from India as well as the neighbouring countries. In 1949, the Sangeet Shala was assimilated in The Maharaja

Sayajirao University of Baroda as the college of Indian Music, Dance and Dramatics in the Faculty of Fine Arts. Then, in 1950 the degree courses in Music were started in four more disciplines viz. Vocal, Tabla, Sitar, Violin and Dilruba. Finally, in the year 1986, it was granted the status of separate faculty, after which it came to be known as the Faculty of Performing Arts. Over the period, the faculty has established itself as one of the star institutions in India for its in-depth study of the classical performing arts. The institute has grown over the years and it is currently divided into five departments namely 1) Department of Dance, 2) Department of Music (Indian Classical/Vocal), 3) Department of Music (Instrumental), 4) Department of Dramatics and 5) Department of Table The classrooms are arranged in a linear pattern on both floors, having doors and windows on both the sides.

Play box: The rear wing of the building houses the "Play box", a small theatre for in-house performances. The theatre is a double-height space, with old pattern seats arranged on the lower as well as on the mezzanine (balcony) level, this "small" theatre will surely take you back in time, with its soft, warm halogen lighting, highlighting the old seats and wooden structure carrying the roof above. This whole setup gives the theatre an old beautiful look, even more than the classrooms and corridors.

Spot 3: Maharani Chimnabai Nyay Mandir

Year of Establishment:1896 AD- Legacy of 124 Years

The Maharani of the visionary Maharaja Sayajirao Gaekwad-III. Maharani Chimnabai died in 1884; the grief-stricken monarch laid the foundation of the building which was to be the Maharani Chimnabai Market, designed by Robert Chisholm, a British architect who pioneered the Indo-Saracenic style of architecture in Madras. When the construction was completed, it was found to be too large and grand for a market. Thus, it was decided to use it as a town Hall. After a few years of being used as a town hall, it was converted to an imperial court, it was inaugurated on 30 November 1896 by the then Governor General and Viceroy of India Lord Dufferin. It was used for musical concerts and

lectures in its early days and later converted to the court and so the building was known as the "Maharani Chimnabai Nyay Mandir". Being the Supreme Court of the pre-independence era, it has turned up as an important building. Eminent people such as Baba Sahab Ambedkar, Aurobindo Ghosh, and Patrick Geddes as well as Baroda's last ruler Pratapsinhrao Geakwad have delivered their speech from the Balcony of the said building. It is one of the most elegant architectural structures in Vadodara.

The Nyay Mandir, which means a temple of justice, is a piece of Byzantine architecture. A Massive area of about 6000 square meters was built at the cost of about 7 Lac rupees at that time. The building has been designed to be almost symmetrical along with the central axis, with a hall in the centre. During the construction, it was decided to convert it as courts of Judiciary along with a large town hall which was designed by Chisholm. This hall was flanked by two courtyards enclosed in rows of law court rooms on three sides. Built with brick, stone, wood and steel, the building's façade has been treated with Italian ceramic tiles of ochre yellow and brick red. Most of the window and entrance doors of the building have been inscribed in different types of arches such as the segmental, semicircular and ogee arches highlighted in white colour. The top portion of the building has been embellished with big and small "chhatris", "pilasters", "finials" and "towering" elements. It also displays beautiful stone and wrought iron "jalis". The front façade of the building has a huge clock fitted on its top, which reminds the time to the passerby. The gem of the building is undoubtedly the beautiful statue of Maharani Chimnabai I, installed in the building at the time of its inauguration. Carved out of white Italian marble the graceful statue was made under the supervision of the famous sculptor A. Felici in the year 1890. The structure does not only carry its architectural legacy but also carries the legacy of the most adored Maharaja of the city and his beloved Maharani. The Nyay Mandir is an example of yet another heritage building with its fate lies with the authorities.

Spot 4: Maharani Chimnabai Kanya Vidyalaya

Year of Establishment: 1916 AD- Legacy of 109 Years

Outside area: One more Legacy in the direction of Women Empowerment which the Gaekwad Family took was the free and compulsory primary education introduced by Maharaja Sayajirao Gaekwad-II in 1893. By the time, in 1906, it covered the whole state. He was the first Indian ruler to embark on such an audacious mission- a target which independent India could not achieve until the Right to Free and Compulsory Education Act 2009 was enacted. Maharani Chimnabai (1872-23 August 1958), Chimnabai II, the second wife of Sayajirao Gaekwad and Maharani of Baroda was a progressive woman who worked for girls' education, abolishing the purdah system and child marriage. She also became the first president of the All India Women's Conference (AIWC) in 1927. Maharani Kanya Vidyalaya is located at Sursagar Lake. The purpose of starting school was to provide an opportunity of studying for the survivors of the Baroda state employees and tribal girls.

Inside area: Maharani Kanya Vidyalaya (Gujarati Medium) one of the well reputed schools in Gujarat managed by Kelavani Trust, Vadodara. Maharani Kanya Vidyalaya earlier was Marathi and Gujarati medium school. A few years ago, Marathi medium was closed down and English Medium Education was started in the building. Presently the 104-year-old building has been plastered and its heritage look has been ruined, except wooden windows and stairs. The building has 3 floors consisting of 34 classrooms on the ground and the first floor. The school library exists to provide a range of learning opportunity for both large and small groups as well as individuals with a focus on intellectual content, information literacy, and the learner.

Maharani English Medium School was established more than a century back, under the trust of Baroda. Maharani believes in certain aims and objective with which they have started the school. The school was founded by Kelavani Education Trust in June 1998.

Spot 5: Maharani Chimnabai Chhatralay

Year of Establishment: 1916 ad legacy of 106 years

This is Maharani Chimnabai Chhatralay. The second wife of the Maharaja Sayajirao Gaekwad-**III** Maharani Chimnabai II (1872-23 August 1958), was a progressive woman who worked for girls' education, abolishing the purdah system and child marriage. She also became the first president of the All India Women's Conference (AIWC) in 1927. Maharani Kanya Chhatralay is located at Sursagar Lake. The purpose of starting this hostel was to provide an opportunity of staying or studying for the survivors of the Baroda state employees and tribal girls. The trust was formed in 1958 and till now the trust has been managed by the hostel. This hostel provides accommodation and meals for students of 9th to 12th standard, huge campus with watchmen, hot and cold water facility, an safe hostel for girl's and also provides facility of tuition. Currently, 150 students are there in the hostel. This building is the same 104-year-old building alike Maharani Kanya Vidhyalay the building has 3 floors consisting of 34 rooms on the ground and the first floor and 8 rooms on the second floor.

Spot 6 Maharani Chimnabai Stree Udhyogalay

Year of Establishment:1914 AD-Legacy Of 86 Years

Outside area: Maharani Chimnabai Stree Udhyogalay this was the major step that Maharani Chimnabai took in the direction was an establishment of a professional training institute called Shree Chimnabai Stree Udhyogalaya. The idea of setting up a vocational institute was in the mind of the queen, ever since her visit abroad in 1909. During her tour, she visited and examined many institutes working for the welfare of women. Upon coming back, she formed a committee to collect the necessary funds and do the research required to establish the institute. Finally, in the year 1914, after acquiring sufficient funds, the institute started with 3 students at the Lallu Bahadur's Haveli in Mehta Pole near Mandvi Gate. The purpose was to give vocational training to women and create opportunities and carry-on activities to provide income to the indigent women [1]. In the

beginning, the ladies were given training in tailoring. Although the institute began in 1914, it only began to have a sufficient number of the students after a few years because of the social conditions of the time, but the queen was persistent, so she appointed wives of few officers, who went from house to house to convince the ladies. These efforts made by the queen and her ladies finally succeeded and brought several students. A certificate from the Udyogalaya was recognized by the Government.

A special fund was collected and granted for the construction of a separate building from the Sir Sayajirao Diamond Jubilee Fund. Thus, a separate building was constructed around 1938-39, near Sursagar Lake. The state architect and contractor Sheth Kavasji Faramji were appointed for the construction of the building. Sitting on a higher level from the road, the double storied building features rows of majestic Islamic arches. Tucked away behind compound walls and tall trees, the building looks out onto the massive lake.

Inside the area, These factors add up to provide a great atmosphere for learning. Apart from this, special care was taken at the time of planning to keep the building well-lit and well ventilated. For this purpose, several windows and corridors were used. The building consists of around 10 large and 10 small rooms, provided for many courses such as - Dressmaking, Hand Embroidery, Computer, Beauty Parlor, Wood Block Printing etc. It was started as a small institute with just 3 students, with the hard work, perseverance and foresight of a visionary Queen have now become a full-fledged institute. At present, the institute is more than 100 years old and still, it continues to provide training to hundreds of women and at the same time helping them to stand on their own feet Orders were also taken for spices, jams, pickles and snacks prepared by needy women. As the number of students increased, new courses such as embroidery, lace making, book binding were also added. Later, in the year 1936, the institute was registered as a charitable institute. This institute was run by a

committee of ladies with the help of a grant from the Government supplemented by private donations.

3   **Mixing of Music, Narration and Panoramic Photograph for Virtual Tour:**

A sequence of panoramic images of each selected spot was 'stitched' together using Photoshop software to create a 'virtual experience. Further, the developed narrations were recorded and background music was mixed with the 360˚ panoramic images with the help of a technical expert. The developed virtual was launched on the official website of the Faculty of Family and Community Sciences on 11th March 2021, 158th Birth Anniversary of His Highness Maharaja Sayajirao Gaekwad-III for data collection purpose at free of cost. The time duration for narrations of selected six Heritage Hubs is described as follow.

Spots	Name	Narration Timing
	Central City, Vadodara	00: 43 Min
Spot 1	Stree Adhyapan Pathshala	02:37 Min
Spot 2	Faculty of Performing Arts	04:16 Min
Spot 3	Maharani Chimnabai Nyay Mandir	03:34 Min
Spot 4	Maharani Chimnabai Kanya Vidyalaya	02:17 Min
Spot 5	Maharani Chimnabai Kanya Chhatralay	01:24 Min
Spot 6	Maharani Chimnabai Stree Udhyogalay	03:33 Min
	Total	**18.47 Min**
Link of Virtual Tour: https://msubaroda.ac.in/vtccb/		

Plate 1 : Central City ,Vadodara 360˚ Panoramic Photography

Plate 2: Maharani Chimnabai Nyay Mandir 360º Panoramic Photography.
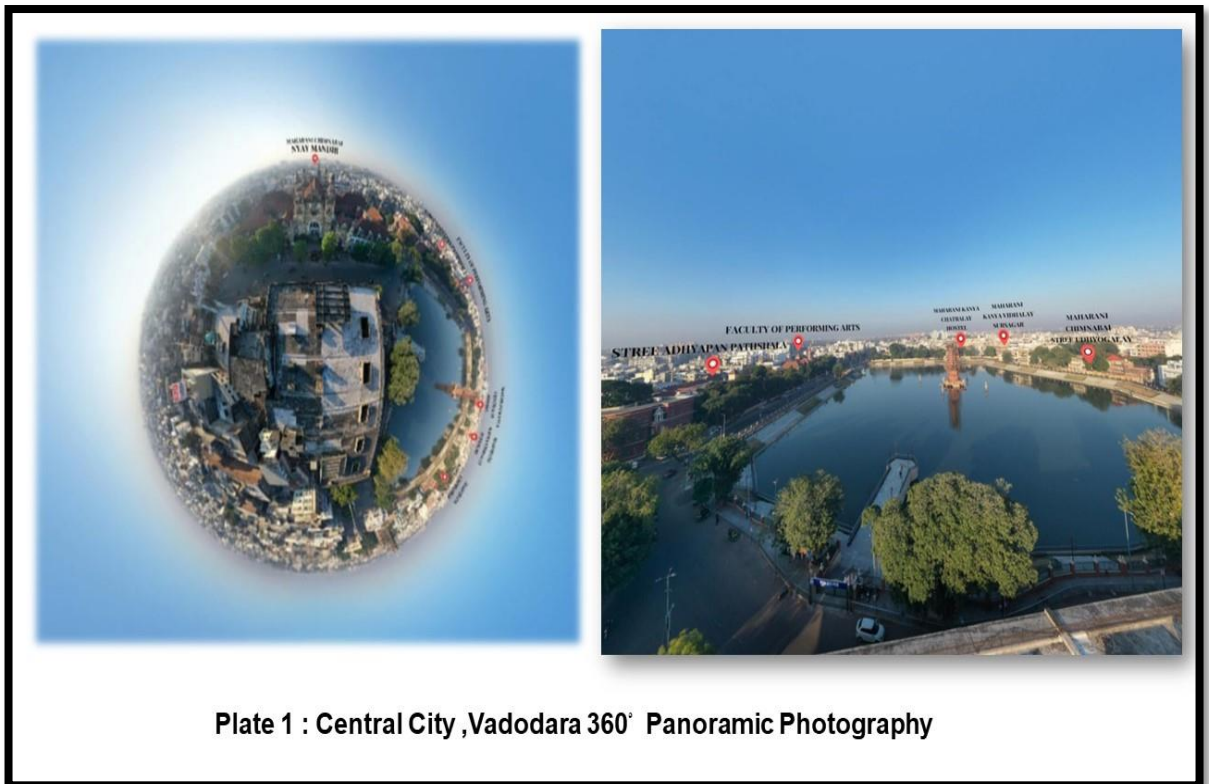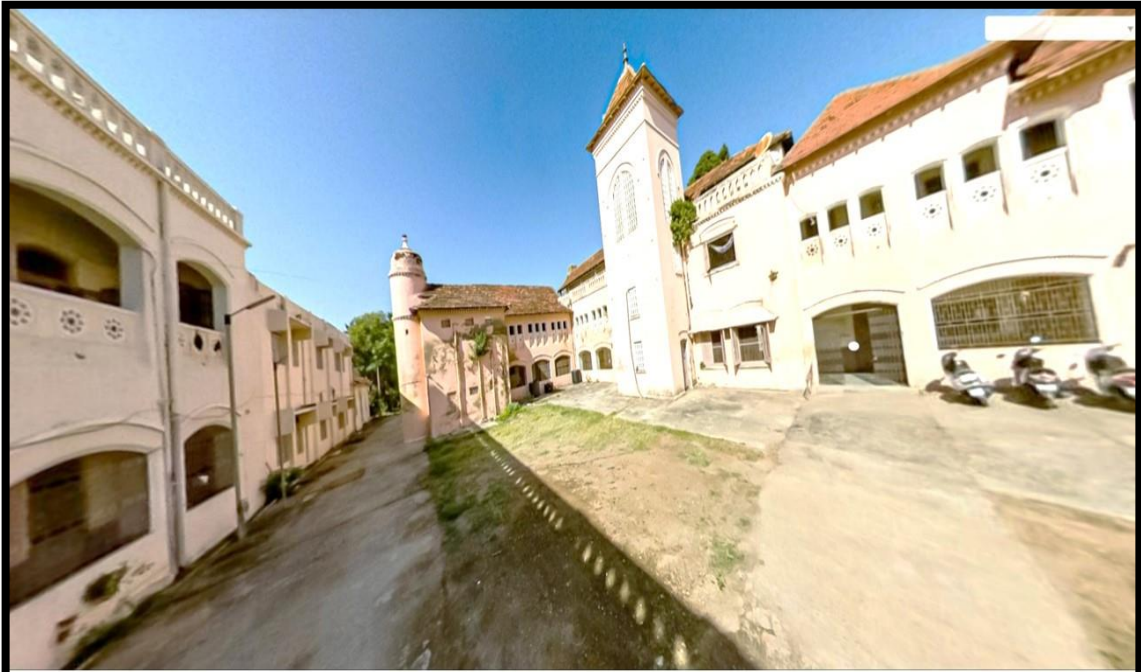
Plate 3: Stree Adhyapan Pathshala 360º Panoramic Photography.
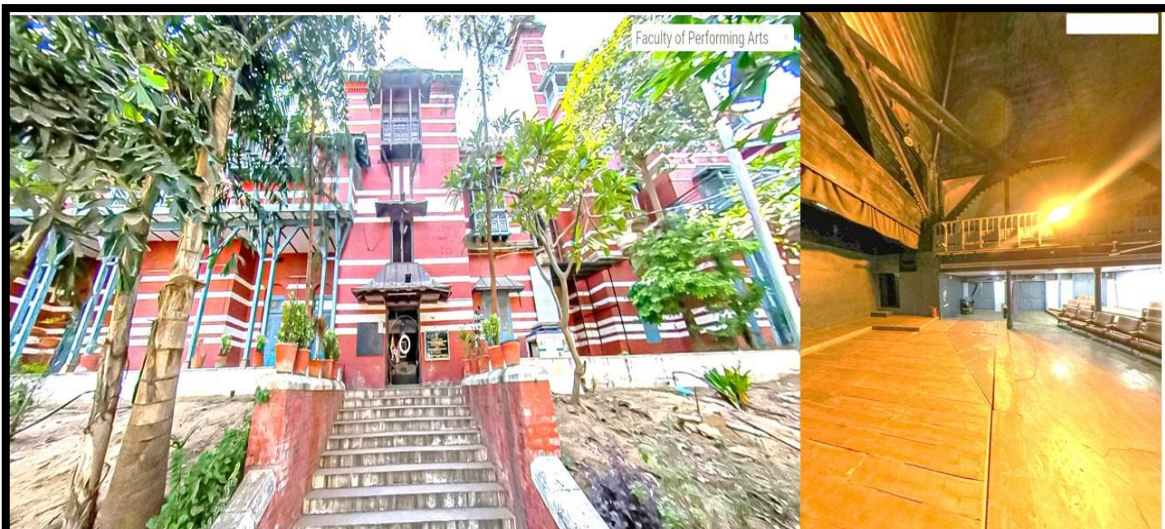
Plate 4: Performing Arts Faculty 360º Panoramic Photography.

Plate 5: Maharani Kanya Chhatralay 360º Panoramic Photography.

Plate 6: Maharani Kanya Vidyalaya 360º Panoramic Photography.

Plate 7: Maharani Kanya Vidyalaya 360º Panoramic Photography.

Plate 8: Maharani Chimnabai Stree Udhyogalay 360º Panoramic Photography.

4.2: Section II: Background Information of the Respondents

This section deals with the background information of the respondents, like personal and situational characteristic which includes educational qualification, affiliation to the Institution and types of Gadgets used to participate in the virtual tour.

4.2.1: Age of the respondents

Table 1 represents the frequency and percentage distribution of the respondents according to their Age. The data reveals that the majority (87.05%) of the respondents belonged to the age group of 19 to 23 years.

Table 1: Frequency and percentage distribution of the respondents according to their Age		
Age of the respondents	**Respondents (n=120)**	
	f	***%***
1. 19 -23	105	87.05
2. 24-28	15	12.05
Total	**120**	**100**

4.2.2: Gender of the respondents

Table 2 represents the frequency and percentage distribution of the respondents according to their Gender. The data reveals that more than half (54.16) per cent of the respondents were male.

Table 2: Frequency and percentage distribution of the respondents according to their Gender.		
Age of the respondents	**Respondents (n=120)**	
	f	***%***
1. Female	55	45.83
2. Male	65	54.16
Total	**120**	**100**

4.2.3. Educational qualification of the respondents

Table 3 depicts the information about the educational qualification of the respondent. The data reveals that more majority (85.0%) per cent of the respondents were pursuing their graduation. Whereas, less than one-fourth of the respondents perusing Post-Graduation (15.00%).

Table 3: Frequency and percentage distribution of the respondents according to their educational qualification		
Educational Qualification	**Respondents (n=120)**	
	f	*%*
1. Graduate	102	85.00
2. Post Graduate	18	15.00
Total	**120**	**100**

Therefore, it can be concluded that the majority of the respondents were perusing their Graduation degree.

4.2.4: Respondents' Affiliation to Institution or College

Table 4 describes the frequency and percentage distribution of the respondents according to their Institution / College they belonged to.

Table 4: Frequency and percentage distribution of the respondents according to their Affiliation to Institution or College		
University	**Respondents (n=120**	
	f	*%*
Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Gujarat.	41	34.16
Family Resource Management, S.M. Patel College of Home Science, Sardar Patel University, Gujarat.	14	11.66
C. Z. Patel College of Business and Management, Charutar Vidya Mandal University, Gujarat.	35	29.16
Indian Institution of Travel and Tourism Management, Noida, U.P.	30	25.00
Total	**120**	**100**

According to the data shown in table 4 it was observed that more than one third (34.16%) of the respondents belonged to the Department of Family and Community Resource Management, Faculty of Family and Community Science, The Maharaja Syajirao University of Baroda, Vadodara. Nearly one-third of the respondents (29.16%) were from C. Z. Patel College of Business and Management, Charutar Vidya Mandal University, Gujarat. Whereas, one-fourth of the respondents (25.00%) belonged to the Indian Institute of Travel and Tourism Management, Noida. While, more than a tenth (11.66 %) per cent of the respondents were perusing their graduation from S.M. Patel College of Home Science, Sardar Patel University, Gujarat (Table 4).

4.2.5: Gadgets used by respondents for Virtual Tour

Table 5 reveals the frequency and percentage distribution of the respondents according to the Gadgets used by them Virtual Tour

The data depicted that majority of the respondents (80%) used Smart Phone, 11. 66 per cent of respondents used laptop. Whereas less than one-tenth per cent of respondents used the tab, and 3.33 per cent of respondent used virtual reality headset for participating in the virtual tour.

Table 5: Frequency and percentage distribution of the respondents according to Gadgets used by them to watch the virtual tour		
Gadgets	**Respondents (n=120)**	
	f	*%*
1. Smart Phone	96	80.00
2. Laptop	14	11.66
3. Tab	6	05.00
4. Virtual Reality Headset	4	03.33
Total	**120**	**100**

Therefore, it can be concluded that the majority of the used Smart Phone for participating in virtual tour (table 5).

4.3: Section III: Extent of Satisfaction Experienced by The Respondents Regarding Various Aspects of Virtual Tour.

This section describes the respondents' satisfaction related to the selected aspect of the virtual tour, viz; Aspect 1: Visual Attributes of the Virtual Tour, Aspect 2: Technology Feature of the Virtual Tour, Aspect 3: Quality of Narration of the Virtual Tour and Aspect 4: Content of Narration of selected spots of the Virtual Tour.

Aspect 1: Visual Attributes of the Virtual Tour

The data shown in table 6 describe the frequency and percentage distribution of the respondents according to their extent of satisfaction regarding Aspect 1: Visual Attributes of the virtual tour.

The data revealed that more than three fourth (84.16%) per cent of the respondents were very satisfied with the "stitching quality of the images", three-fifth (60.83%) per cent of the respondents were very satisfied with the "Clarity of the Image /Picture", less than three-fifth were very satisfied with "angels selected for taking the panoramic picture/ image" (59.16 %) and "Zooming of images/picture" (56.66 %) respectively.

Whereas, more than half (53.33 %) per cent of the respondents were very satisfied with the "realness of the picture / Image". While half (50.83 %) per cent of the respondents were very satisfied with the "sequencing of the picture/ Image".

Therefore, it can be concluded that the majority (84.16%) per cent of the respondents were very satisfied with the stitching of the images/pictures with **a weighted mean of 4.73 (table 6).**

Aspect 2: Technology Features of the Virtual Tour

The data shown in table 7 describe the frequency and percentage distribution of the respondents according to their extent of satisfaction regarding Aspect 2: Technology Features of the virtual tour.

The data revealed that more than two-thirds (69.16%) per cent of the respondents were very satisfied **with** the "zooming sense of software for panoramic image", more than half per cent of the respondents were very satisfied with the "arrows and direction feature for entering the space" (53.33

%) and "Synchronizing of Images and narrations of the Virtual tour on click" (55 %) respectively.

Whereas, half (50%) per cent of the respondents were very satisfied with the "360' angles rotation feature", "speed of scene movement" and "placement of arrows on the spots to enter in" respectively.

Thus, it can be concluded that more than two-thirds (69.16%) per cent of the respondents were very satisfied with the Zooming Sense of software for panoramic Image with **a weighted mean of 4.67 (table 7)**.

Aspect 3: Quality of Narration of the Virtual Tour

The information revealed in table 8 describe the frequency and percentage distribution of the respondents according to their extent of satisfaction regarding Aspect 3: Quality of Narration of Virtual Tour. The data revealed that two-third (65%) per cent of the respondents were very satisfied with the "pronunciation of narrator. More than half per cent of the respondents were very satisfied with the "pitch and volume of the narrator" (57.5%), "vocal pace of the narrator" (55.8%) and "Speed of the speech of the narrator" (55%) respectively. Half per cent **(**50.80%) of the respondents were very satisfied with "Overall quality of narration".

Whereas, less than half per cent of the respondents were very satisfied with the "language fluency of the narrator "(48.33%) and "Voice Clarity the narrator" (46.66%) respectively. While more than two-fifth (44.10 %) per cent of the respondents were very satisfied with the "Background music the recordings".

Hence, it can be concluded that two-third (65%) per cent of the respondents were very satisfied with the "pronunciation of narrator with the **weighted mean 4.56 (table 8).**

Aspect 4: Narration of Spots of the Virtual Tour

The data given in Table 9 describes the frequency and percentage distribution of the respondents according to their extent of satisfaction regarding Aspect 4: Narration of Spots of Virtual Tour. The data revealed that more than two-third (66.66%) of respondents were very satisfied with the "Elaboration of stories about people or place related to spots". More than three-fifth (61.66%) were

very satisfied with the "synchronize of narration with visualization". Regarding the "effectiveness of narration of spots" more than half (53.3%) of the respondents reported that they were very satisfied.

Whereas, less than three-fifth per cent of the respondents were very satisfied with the "completeness of information on used for narration" (49.16%), "sequencing of narration" (48.33%) and "language used for narration" (46.66%) respectively. While more than two-fifth (43.33%) per cent of the respondents were satisfied with the "authenticity of information on used for narration".

Therefore, it can be concluded that concerning the Narration of Spots of Virtual Tour more than two-third (66.66%) of respondents were very satisfied with the "Elaboration of stories about people or place related to spots" with the **weighted mean of 4.63 (table 9)**.

Table 6: Frequency and Percentage distribution of the respondents according to their extent of satisfaction related to the Aspect 1: Visual Attributes of Virtual Tour

(n=120)

Sr. No	Aspect 1: Visual Attributes of Virtual Tour	Very Satisfied		Satisfied		Neutral		Dissatisfied		Very Dissatisfied		Wt. Mean Score (1-5)
		f	%	f	%	f	%	f	%	f	%	
1	Clarity of the image / Picture.	73	60.83	33	27.5	14	11.6	00	00	00	00	4.49
2	The realness of the image/picture.	64	53.33	39	32.5	13	10.83	04	3.33	00	00	4.36
3	Sequencing of the image/picture.	61	50.83	49	40.83	08	6.66	02	1.66	00	00	4.40
4	Angle selected for taking panoramic picture/Image	71	59.16	32	26.66	11	9.16	03	2.5	03	2.5	4.37
5	The zooming of the images/ picture.	68	56.66	36	30	10	8.33	05	4.16	01	0.83	4.37
6	The stitching quality of images.	101	84.16	10	8.33	06	05.00	02	1.66	01	0.83	4.73
	Total Weighted Mean											**4.4**

Table 7: Frequency and percentage distribution of the respondents according to their extent of satisfaction related to the Aspect 2: Technology Feature of Virtual Tour

(n=120)

Sr. No	Aspect 2: Technology Feature of Virtual Tour	Very Satisfied		Satisfied		Neutral		Dissatisfied		Very Dissatisfied		Wt. Mean Score (1-5)
		f	%	f	%	f	%	f	%	f	%	
1.	Zooming Sense of software for panoramic Image.	83	69.16	30	25.00	03	02.50	04	03.33	00	00	4.67
2.	360' Angles Rotation Feature.	60	50.00	50	41.66	06	05.00	04	03.33	00	00	4.38
3.	Speed of Scene Movement.	60	50.00	50	41.66	07	00.05	03	02.50	00	00	4.39
4.	Arrows or Direction Feature.	64	53.33	39	32.50	13	10.80	02	01.66	02	1.66	4.34
5.	Arrows placement on the spots to enter in.	60	50.00	41	34.16	08	06.66	08	06.60	03	02.50	4.25
6.	Synchronizing of Images and narrations of the Virtual tour on click.	66	55. 00	44	36.66	06	05.00	04	03.33	00	00	4.43
	Total Weighted Mean											4.4

Table 8: Frequency and Percentage distribution of the respondents according to their extent of satisfaction related to the Aspect 3: Quality of Narration of Virtual Tour (n=120)

Sr. No	Aspect 3: Quality of Narration of Virtual Tour	Very Satisfied		Satisfied		Neutral		Dissatisfied		Very Dissatisfied		Wt. Mean Score (1-5)
		f	%	f	%	f	%	f	%	f	%	
1	Voice clarity of the narrator.	56	46.66	44	36.66	17	14.16	01	0.83	02	1.66	4.25
2	The vocal pace of the narrator.	67	55.83	32	26.66	18	15.00	01	0.83	02	1.66	4.34
3	The pitch and volume of the narrator.	69	57.50	48	40.00	01	0.83	01	0.83	01	0.83	4.52
4	Speed of the speech of the narrator	66	55.00	47	39.16	06	09.10	01	0.83	00	00	4.42
5	The background music of the recording.	53	44.10	48	40.00	13	10.83	02	01.66	04	3.33	4.20
6	Pronunciation of the narrator.	78	65.00	35	29.16	05	4.16	01	00.83	01	0.83	4.56
7	Language fluency of the narrator.	58	48.33	45	37.50	11	9.1	03	02.50	03	2.50	4.22
8	The overall voice quality of the narrator.	61	50.8%	46	38.33%	11	9.1	04	3.33	02	1.66	4.26
										Total Weighted Mean		**4.3**

Table 9: Frequency and Percentage distribution of the respondents according to their extent of satisfaction related to the Aspect 4: Narration of Spots of Virtual Tour

(n=120)

Sr. No	Aspect 4: Content of Narration of selected Spots of Virtual Tour	Very Satisfied		Satisfied		Neutral		Dissatisfied		Very Dissatisfied		Wt. Mean Score (1-5)
		f	%	f	%	f	%	f	%	f	%	
1	Completeness of information used for narration.	59	49.16	57	47.5	02	1.66	01	0.83	01	0.83	4.43
2	The authenticity of information used for narration.	50	41.66	52	43.33	14	0.11	02	1.66	02	1.66	4.21
3	Languages used for narration.	56	46.66	48	40. 00	12	10. 00	02	1.66	02	0.83	4.28
4	Sequencing of narration.	58	48.33	48	40. 00	12	10. 00	02	1.66	00	00	4.35
5	Effectiveness narration.	64	53.33	36	30. 00	18	15. 00	02	1.66	00	00	4.39
6	Elaboration of stories about people or place related to spots	80	66.66	36	30. 00	04	3.33	00	00	00	00	4.63
7	Synchronization of narration with visualization.	74	61.66	34	28.33	12	10. 00	00	00	00	00	4.51
	Total Weighted Mean											4.4

Overall Extent Tourists Satisfaction Scale for the Selected Aspects of Virtual Tour based on Weighted Mean (1-5) divided into equal intervals.

Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied
1 to 1.80	1.81 - 2.60	2.61 - 3.40	3:41 - 4:20	4:21 - 5:00

Table 10: Overall Extent Tourists Satisfaction for the Selected Aspects of Virtual Tour based on Weighted Mean.	
Various Aspect of Virtual tour	**Wt. Mean Score (1-5)**
1. Visual Attributes of Virtual Tour	**4.4**
2. Technology Feature of Virtual Tour	**4.4**
3. Quality of Narration of Virtual Tour	**4.3**
4. Content of Narration of selected Spots of Virtual Tour	**4.4**

The information showed in table 10 reveals that the respondents were highly satisfied with all the four aspects of the virtual tour developed for the educational Heritage Hubs established by Maharaja Syajirao Gaekwad-III in the central city, Vadodara.

1.4. Section IV: Extent of overall satisfaction of the respondents regarding Virtual Tour.

Table 11, gives a clear representation of the respondents' extent of overall satisfaction regarding the developed "Virtual Tour". It can be observed from the data that "virtual reality experiences of the developed virtual tour", "360' panoramic photography of the developed virtual tour" and "sequencing of spots of the developed virtual tour" scored highest on respondents' overall satisfaction scale with the **weighted mean score of 2.5.**

Whereas, "self-managed feature of the developed virtual tour", **"**time is taken for uploading of the virtual tour on your gadget", "controlling system of arrow and cursor of the developed virtual tour", "size, style and colour of direction tag used for

Sr. No	Statements Related to Overall Satisfaction	Less Satisfied		Moderately Satisfied		Highly Satisfied		Wt. Mean (1-3)
		f	%	f	%	f	%	
1	How satisfied are you with the self-managed feature of the developed virtual tour?	16	13.33	40	33.33	64	53.33	2.4
2	How satisfied are you with the time taken for the narration of for developed virtual tour?	12	10.00	58	48.66	50	41.66	2.3
3	How satisfied are you with the time taken for uploading the virtual tour on your gadget?	08	6.66	54	45.00	58	48.33	2.4
4	How satisfied are you with the controlling system of arrow and cursor of the developed virtual tour?	10	8.33	48	40.00	62	51.66	2.4
5	How satisfied are you with the 360' panoramic photography of the developed virtual tour?	00	00	50	41.66	70	58.33	2.5
6	How satisfied are you with the sequencing of spots of the developed virtual tour?	10	8.33	38	31.66	72	60.00	2.5
7	How satisfied are you with the size, style and colour of the direction tag used for the developed virtual tour?	12	10.00	38	31.66	70	58.33	2.4
8	How satisfied are you with the quality of narration of the developed virtual tour?	20	16.66	40	33.33	60	50.00	2.3
9	How satisfied are you with the virtual reality experiences of the developed virtual tour?	12	10.00	34	28.33	74	61.66	2.5
10	How satisfied are you with the pixel of panoramic photography of a developed virtual tour?	18	15.00	34	28.33	68	56.66	2.4
11	How satisfied are you with the synchronization of narration with the music of the developed virtual tour?	12	10%	44	36.66	64	53.33	2.4

Table 11: Frequency and percentage distribution of the respondents according to their overall extent of satisfaction for the developed Virtual Tour

the developed virtual tour", "synchronization of narration with the music of developed virtual tour" and "pixel of panoramic photography for developed virtual tour" scored second highest on respondents' overall satisfaction scale with the **weighted mean score of 2.4.**

While "quality of narration of the developed virtual tour" and "time is taken for the narration of for developed virtual tour" scored third highest on respondents' overall satisfaction scale with the **weighted mean score of 2.3.**

However, all the attributes of the developed Virtual Tour scored between 2.60 to 3.00, thus it can be concluded that the respondents were Highly Satisfied with the various attributes of the developed Virtual Tour.

Respondents' Overall Satisfaction Scale for the developed Virtual Tour based on Weighted Mean (1 – 3) divided into equal intervals.

Least Satisfied	Moderately Satisfied	Highly Satisfied
1.00 to 1.59	1.60 to 2.59	2.60 to 3.00

4. 5.   Section V: Testing of Hypothesis

The present section covers in detail the statistical analysis of the hypotheses of the present study. The relational statistic applied to test the hypotheses were 'Analysis of Variances', Scheffe's test and 't' test.

Analysis of Variance was computed to show the difference in the extent of satisfaction regarding various aspects of a virtual tour with personal variable viz; education and situational variables viz; Gadgets used by the respondents. 't" test was applied to find out the mean difference between personal variable viz; Gender of the respondents with the respondents' satisfaction regarding the aspect of the virtual tour. Scheffe's test was computed to show the difference between the type of gadgets used by the respondents with the extent of respondents' satisfaction regarding various aspects of Virtual Tour.

HO$_1$: There exists no relationship between the extent of respondent's satisfaction regarding a virtual tour for a selected educational hub established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara with selected personal variables (Gender, education) and situational variable (gadget used) of the respondents.

For statistical analysis, sub- hypotheses were formulated

HO$_{1.1}$: The extent of respondents' satisfaction regarding virtual tour developed for selected educational hubs established by His Highness Maharaja Sayajirao Gaekwad – III in Central City, Vadodara, does not vary with their selected personal variable (education) and situational variable (gadget used).

ANOVA was computed to find out the variation between the extent of satisfaction experienced by the respondents' regarding the virtual tour with their personal variables namely education and situational variables namely gadgets used by the respondents'.

Selected Personal and Situational Variables	Satisfaction Experienced for Virtual Tour				
	Sum of Square	Mean Square	df	F-ratio	Level of Significance
Education					
Between Group	504.994	504.994	1	2.6574	N. S
Within Group	22283.373	188.842	118		
Gadgets used by the respondents'					
Between Group	2170.190	542.547	4	542.547	**0.02**
Within Group	20618.177	179.288	115		
df= Degree of Freedom N.S.= Not Significant					

Table 12: Analysis of Variance for selected personal and situational variables with the extent satisfaction experienced by the respondents' regarding the virtual tour.

The finding of table 12, depicts that, the computed F-ratio for the selected personal variables namely education of the respondents was found to be not significant with the extent of respondents' satisfaction regarding various aspects of Virtual Tour. However, gadgets used by the respondents were found to be significant at 0.02 level with the extent of respondents' satisfaction regarding various aspects of Virtual Tour developed for selected heritage educational hubs. Thus, the null hypothesis was partially accepted.

Therefore, it can be concluded that the extent of respondents' satisfaction regarding various aspects of Virtual Tour varies with a gadget used by the respondents **(Table 12)**.

Further Scheffe's test was computed to find out the variation between the extent of satisfaction experienced by the respondents' regarding the virtual tour with their situational variables namely the type of gadgets used by the respondents'.

Table 13: Scheffe's test showing the difference between the Gadgets used by the respondents with the extent of respondents' satisfaction regarding Aspects of Virtual Tour.				
Sr. No	Gadgets used by the Respondents'	Mean differences	df	Level of Significance
1.	Smart Phone	16.00323		
2.	Laptop	6.9132	115	0.02
3.	Other (Tab & virtual reality handset)	8.0000		
df= Degree of Freedom *Level of Significance= 0.02				

The result of Schefft's test revealed that regarding the extent of satisfaction experienced, those respondents who used smartphone differed significantly from those respondents who used laptop, or other gadgets like Tab, Virtual Headset. Hence, based on the mean score it was concluded that respondents who were using smartphone had a high extent of satisfaction regarding various aspect of the virtual tour **(Table 13).**

HO$_{1.2}$: The extent of respondents' satisfaction regarding the virtual tour for selected education Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad –III in Central City, Vadodara, does not vary with their selected personal variable (Gender).

The 't' test was computed to find out the significant difference in the mean score of the extent of satisfaction experienced by the respondents regarding virtual tour developed for selected heritage educational hubs due to the personal variable (gender).

Table 13: 't' test showing the mean difference in the extent of satisfaction experienced by the respondents' regarding virtual tour due to their personal variables Gender.				
Selected Personal and Situational Variables	**Mean**	**"t" Value**	**df**	**Level of Significance**
Gender				
Male	121.738	1.601	118	0.000
Female	105.327			
*df= Degree of Freedom *Level of Significance= 0.000*				

Table 13, clearly depicts that a highly significant difference was found in the extent of satisfaction experienced by the respondents' due to their personal variables (gender) at 0.000 level as 't' calculated was higher than t tabulated. Thus, the null hypothesis $H0_{1.2}$ was partially accepted.
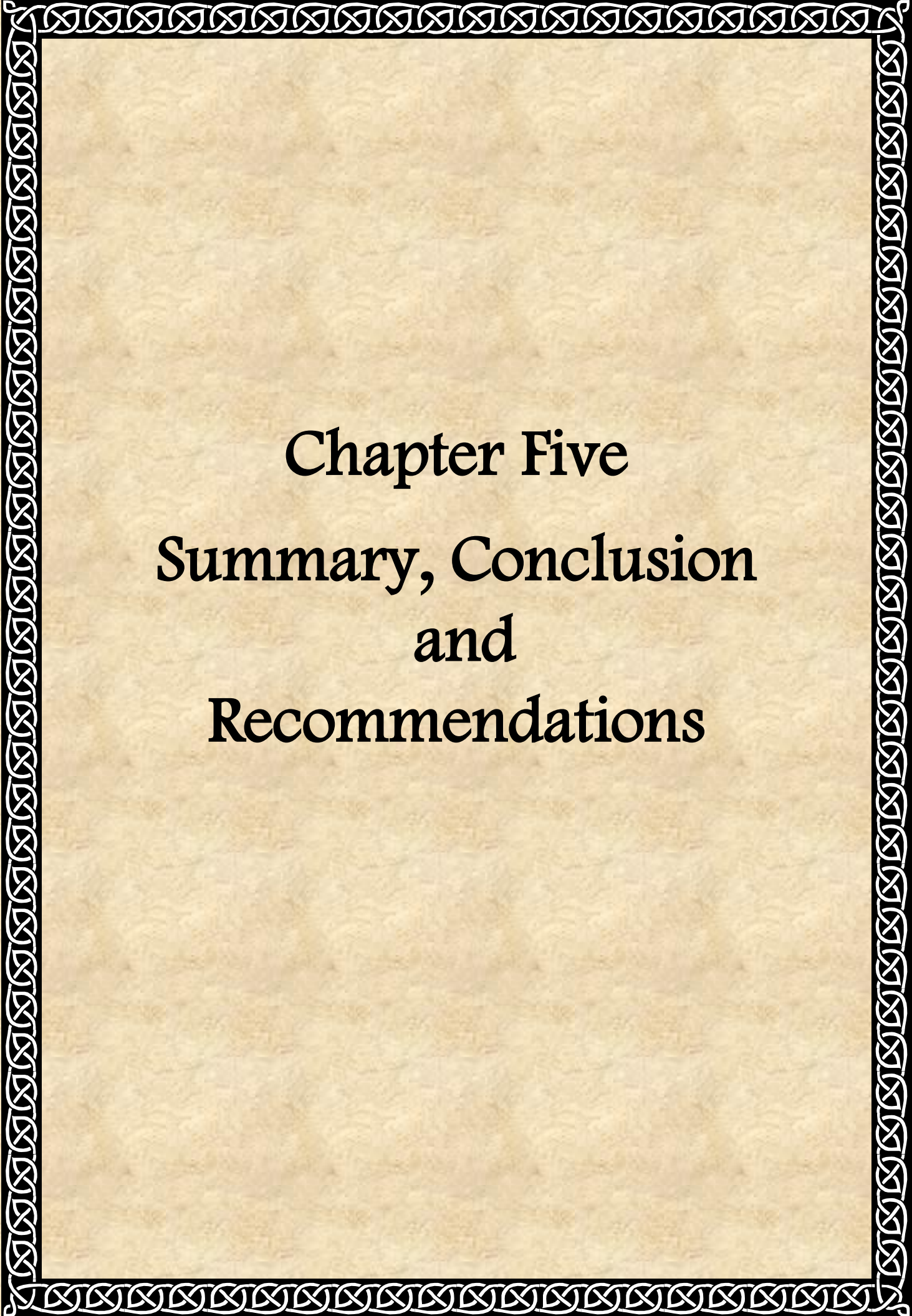
Conclusion

Vadodara is the third-largest city in the Indian state of Gujarat. His Highness Maharaja Sayajirao Gaekwad-III, who ruled from 1875 to 1939, did much to modernize Baroda, establishing compulsory primary education, a library system, a university, and model textile and tile factories, which helped to create Baroda's image as a modern education as well as an industrial hub. During his great initiatives, various Educational Hubs were established in central Vadodara city during his era. These educational structures have a great legacy of more the 80 years. Undesirably the history of these treasure troves has lost in the chaos of city life. Since the virtual tour is one of the latest technologies adopted by the heritage destination managers as a promotional tool that can help bring new visitors to the historical destination and enhance the tourist experience to promote and to tell the history of the educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III a Virtual Tour was developed and launched on the official website of Faculty of

Family and Community Sciences on 11th March 2021, 158th Birth Anniversary of His Highness Maharaja Sayajirao Gaekwad-III.

The findings depicted that majority of the respondents were highly satisfied with Aspect 1: Visual Attributes, Aspect 2: Technology Feature, Aspect 3: Quality of Narration and Aspect 4: Content of Narration of selected Spots. Regarding respondents' overall satisfaction related to virtual tour, it was found that "virtual reality experiences of the developed virtual tour", "360' panoramic photography of the developed virtual tour" and "sequencing of spots of the developed virtual tour" scored highest on respondents' overall satisfaction scale. Whereas, "self-managed feature of the developed virtual tour", "time is taken for uploading of the virtual tour on gadget", "controlling system of arrow and cursor of the developed virtual tour", "size, style and colour of direction tag used for the developed virtual tour", "synchronization of narration with the music of developed virtual tour" and "pixel of panoramic photography for developed virtual tour" scored second highest on respondents' overall satisfaction scale. While "quality of narration of the developed virtual tour" and "time is taken for the narration of for developed virtual tour" scored third highest on respondents' overall satisfaction scale.

To find out the variation between the extent of satisfaction experienced by the respondents' regarding the virtual tour with their personal variables and situational variable ANOVA was computed. The finding depicted that; the selected personal variables "education" of the respondents was found to be not significant with the extent of respondents' satisfaction regarding various aspects of Virtual Tour. However, the situational variable "gadget used by the respondents" was found to be significant at 0.02 level. Additional, Scheffe's test was computed to find out the variation between the extent of satisfaction experienced by the respondents' regarding the virtual tour with the type of gadgets used by the respondents. The result revealed that regarding the extent of satisfaction experienced, those respondents who used smartphone differed significantly from those respondents who used laptop, or other gadgets like Tab, Virtual Headset. Further, 't' test revealed that a highly significant difference was found in the extent of satisfaction experienced by the respondents' due to gender at 0.000 level as 't' calculated was higher than 't' tabulated.

Chapter Five

Summary, Conclusion and Recommendations

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary:

India has a rich tradition of education right from antiquity. Education has always been given great prominence in Indian society since the times of the Vedic Civilization with Gurukuls and Ashram being the centres of learning and with evolving times a large number of centres of learning were established across ancient India.

Education in India is not a recent origin. The people of India had great reverence and love for education. Since the first appearance in authentic history, the people of India have enjoyed the reputation of being a learned man. India is home to numerous ancient universities spread across the length and breadths like Takshila University, Nalanda University, Mithila University, Telhara University, Sharada Peeth Temple University, Vallabhi University, Puspagiri University, Odantapuri University, Vikramshila University, Sompura University, Bikrampur University, Morena Golden Triangle University, Kanthalloor Sala University, Jagaddala University and Nadia University. Students across the world came and studied in these learning centres. These ancient universities were considered as a place of historical sanctity, the seat of Vedic learning, a place of religion comprised of several temples and architecture masterpieces enveloped by a lofty wall and a huge gate, educational and residential buildings, compounds, stupas, classroom, library complex with most sacred manuscripts, meditation halls, parks and lake adorned the institution's grounds. This unique characteristic of these universities to accommodate multiple discourses under one roof seemed to be the most attractive feature which tempted knowledge seekers from various parts of the world.

The Journey of the education system in India is endowed with the richest and the most diverse stock of religious, cultural, educational and architectural heritage structures, monuments and buildings amongst which a

significant proportion of them are protected and declared as World Heritage Monuments by UNESCO, approximately 3,650 monuments are in the custody of Archaeological Survey of India (ASI) declared as monuments of national importance.

Some of them are in the custody of religious endowments, Archaeology Departments under state governments. Those heritage structures which are unprotected and do not come under any formal system due to lack of infrastructure and funds are protected mainly by the intervention of Non-Governmental Organisations.

India being a captivating centre for religious and cultural educational hub fascinates many inbound and outbound tourist to visit these heritage destinations. Apart from religious and cultural education, people are also fascinated by the indigenous crafts and artistries of India. Therefore, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life is essential. Planned promotional activity plays a significant role to attract tourists to heritage destinations. Many developed and developing countries have successfully adopted profile-raising concepts and tools to promote and attract tourists to heritage destination in their countries amongst which virtual tours have proven to be game changers.

A virtual tour is a computer and electronic technology used to create a new world, a seemingly realistic environment, through a variety of sensing devices, which users can use according to their feeling. The virtual tours are users centric marketing and promotion method which has revolutionized the way of presenting and promoting the heritage sites. These virtual tours offer scholars, students and visitors unprecedented access to architectural, historical, geographical, archaeological, and anthropological data that maximize visitors' engagements, offering the modern visitors, a chance to virtually visit a place before making their final decision. These technologies provide an interesting and attractive channel through which it is possible to

educate or inform a wide audience about historic artefacts or destinations to assist audiences in visiting sites that are difficult to access in real life.

A virtual tour consists of a panoramic photography application that allows users to interact with the panorama, for example, rotating it in all directions, from the floor to the ceiling, to go from one room to another, to zoom on the image, etc. Additionally, multimedia information and hyperlinks are also incorporated to provide more in-depth information so that the final presentation is enriched. The virtual tour allows the users to appreciate heritage assets with an immersive experience. People who cannot travel due to any reason can still enjoy the same experience in a safe and protected environment. The virtual tour offers professional tour operator and commercial advertisers of heritage destinations, a unique opportunity to promote their presentations, websites and online marketing messages directly to the prospective audience. High quality virtual tour impresses the viewer deeply and keeps them on the website for a long time which is a key factor to gain new customers and retain old stakeholders. The virtual tour works continuously and enhances the value of the destination through its Internet presence.

Therefore, it was thought that the present study will be distinctive and will contribute to the existing literature on heritage tourism. The study will benefit the tour operator and heritage destination managers by providing a deeper understanding of the significance of virtual tour in the presentation and promotion of Heritage destination. The study will contribute to the field of Family and Community Resource Management as it deals with the management of community resources i.e., the heritage. The study will benefit the Department of Family and Community Resource Management and other academic institutes offering courses like Travel and Tourism, Destination Management, Travel Agency and Tour Operation at the undergraduate and Post Graduate level in strengthening their knowledge, curriculum and in its application to the practical field. This study will provide feedback to tour operators in Vadodara city, as they can use the concept of developed virtual

tour and interpretation and promote other significant destinations of Vadodara and enhance the customer experience taking part in Vadodara Darshan. It can also be considered as a guideline in developing other virtual tours for religious, educational and cultural heritage destination.

Objectives:

1. To collect and synthesize information regarding selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in the Central City, Vadodara.

2. To develop a virtual tour for the selected Education Heritage Hubs, established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

3. To assess the extent of satisfaction experienced by the users regarding the selected aspect of virtual tour developed for Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

Delimitation of the study:

1) The present study is limited to selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara namely;

   I.   Stree Adhyapan Pathshala (Estd.1882),
   II. Performing Arts Faculty (Estd.1886),
   III. Maharani Chimnabai Nyay Mandir (Estd.1896).
   IV. Maharani Chimnabai Stree Udyogalay (Estd.1934)
   V.   Maharani Chimnabai Kanya Vidhyalaya (Estd.1916),
   VI. Maharani Chimnabai Kanya Chhatralaya (Estb. 1916)

2) The present study was limited to users who were about 19 years of age, could understand the English language and be studying Travel and Tourism subject and willingly participated in the study.

3) The present study was limited to users who were having smart gadget through which they participated in the developed virtual tour.

Hypotheses of the study:

1. There exists a variation in the extent of users' satisfaction regarding Virtual Tour developed for the selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad-III in Central City, Vadodara, Gujarat with their selected personal and situational variables.

Methodology

The present study aimed to assess the users' satisfaction regarding the developed virtual tour for the selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara.

The purposive sampling technique was used for the selection of the sample for the present study. Under this procedure amongst the various educational hubs in the Central City, Vadodara only those were selected purposively for the study, which was established by His Highness Maharaja Sayajirao Gaekwad-III and had a legacy of a minimum of 80 years. For the selection of the respondents, purposively those were selected who were above 19 years in age, could understand the English language, as the narrations developed were in the English language, studying subjects related to travel and tourism field in the universities or institutions of India and were willing to participate in the research study.

One of the prime objectives of the present investigation was to develop a 360˚ Virtual Tour for selected Educational Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara and to develop narrations for the selected spots. Hence, to achieve this objective, the investigator collected and synthesized the information about the selected educational heritage hubs to identify and enlist potential spots that could be included in the 360˚ virtual tour.

For the development of 360˚ virtual tour comprised of the sequence of panoramic images were stitched together using Photoshop software by the technical expert to create a virtual experience of a selected Educational

Heritage Hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara which also included sound effects such as music and narration. To develop the narrations the relevant literature was procured from the library, social media platforms and the authorities of the selected educational heritage hubs. The collected facts and information were synthesized and transcribed in the form of narrations by the investigator. Future, the developed narrations were validated by the authorities of the selected educational heritage hubs. Then the validated content of narrations was recorded in the studio with the help of technical experts and subsequently, the music was also mixed. These narrations were then used in a virtual tour. The developed virtual tour could be viewed through desktop computers, laptops, tablets, and mobile devices.

The questionnaire was selected as a tool which was divided into 3 sections. Where, Section I dealt with the background information of the respondents, Section II dealt with respondent's satisfaction regarding various aspects of virtual tour namely Visuals, Technology feature, voice quality of narration, the content of narration of spots, Section III dealt with the overall satisfaction of the virtual tour. Google form was considered to be the most suitable tool for data collection as It is a free online tool, that allows collecting information easily and efficiently across the globe. The Google forms are useful to create surveys in a few minutes regarding the experience of the respondents about the virtual tour and also it was thought to be the safest way of data collection in this pandemic situation of Covid-19.

To validate the data collection tool, it was given to a panel of 11 judges comprising the experts from the Travel and Tourism Industry, Faculty of Family and Community Sciences. The judges were requested to judge whether the listed items under each aspect were clear or ambiguous and relevant or irrelevant. Based on the valuable suggestions given by the experts, the tool was modified and finalized for the data collection.

The collected data were analyzed using descriptive statistics in terms of frequency and percentages, weighted mean, analysis of variance, and co-effective of correlation.

The major finding of the study:

Section I: Background information

- The data reveals that the majority (87.05%) of the respondents belonged to the age group of 19 to 23 years.

- The data reveals that more than half (54.16) per cent of the respondents were male.

- The data reveals that more majority (85.0%) per cent of the respondents were pursuing their graduation. Whereas, less than one-fourth of the respondents perusing Post-Graduation (15.00%).

- It was observed that more than one third (34.16%) of the respondents belonged to the Department of Family and Community Resource Management, Faculty of Family and Community Science, The Maharaja Sayajirao University of Baroda, Vadodara. Nearly one-third of the respondents (29.16%) were from C. Z. Patel College of Business and Management, Charutar Vidya Mandal University, Gujarat. Whereas, one-fourth of the respondents (25.00%) belonged to the Indian Institute of Travel and Tourism Management, Noida. While, more than a tenth (11.66 %) per cent of the respondents were perusing their graduation from S.M.Patel College of Home Science, Sardar Patel University, Gujarat.

- The data depicted that majority of the respondents (80%) used Smart Phone, 11.66 per cent of respondents used a laptop. Whereas less than one-tenth per cent of respondents used the tab, and 3.33 per cent of respondent used the virtual reality headset for participating in the virtual tour.

Section II: Satisfaction regarding Aspects of the Virtual Tour

The extent of Satisfaction experienced by the respondents concerning various aspects of the virtual tour, the data revealed that the majority of the respondents were highly satisfied with Aspect 1: Visual Attributes of Virtual Tour, Aspect 2: Technology Feature of Virtual Tour, Aspect 3:Quality of Narration of Virtual Tour and Aspect 4:Content of Narration of selected Spots of Virtual Tour.

Section III: The extent of overall satisfaction related to the Virtual tour

The extent of overall satisfaction related to virtual tour, it was found that "virtual reality experiences of the developed virtual tour", "360' panoramic photography of the developed virtual tour" and "sequencing of spots of the developed virtual tour" scored highest on respondents' overall satisfaction scale. Whereas, "self-managed feature of the developed virtual tour", "time is taken for uploading of the virtual tour on your gadget", "controlling system of arrow and cursor of the developed virtual tour", "size, style and colour of direction tag used for the developed virtual tour", "synchronization of narration with the music of developed virtual tour" and "pixel of panoramic photography for developed virtual tour" scored second highest on respondents' overall satisfaction scale. While "quality of narration of the developed virtual tour" and "time is taken for the narration for developed virtual tour" scored third highest on respondents' overall satisfaction scale.

Conclusion:

India has a rich tradition of education right from ancient times. Education has always been given prodigious importance in Indian society. Since the times of the Vedic Civilization with Gurukuls and Ashram being the centres of learning and with evolving times, a large number of centres of learning were established across ancient India. The educational heritage, both tangible and intangible, represents value systems, beliefs, traditions and lifestyles of society which is being transmitted from one generation to another. This fascinates many inbound and outbound tourist and knowledge seekers to visit these heritage destinations. Thus, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life are indispensable.

Vadodara is the third-largest city in the Indian state of Gujarat. His Highness Maharaja Sayajirao Gaekwad-III, who ruled from 1875 to 1939, did much to modernize Baroda, establishing compulsory primary education, a library system, a university, and model textile and tile factories, which helped to create Baroda's image as a modern education as well as an industrial hub. Amongst his great initiatives of socio-economic reforms one the most

significant was education. Various educational hubs were established by His Highness Maharaja Sayajirao Gaekwad-III in the central Vadodara city during his era. These educational structures have a great legacy of more the 80 years. Undesirably the history of these treasure troves has lost in the chaos of city life.

A virtual tour is one of the latest technologies adopted by the heritage destination managers as a promotional tool that can help bring new visitors to the historical destination and may enhance the tourist experience by providing resulting increased demand for the destination. Keeping this perspective in mind to promote and to tell the history of the educational heritage hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central city, Vadodara a virtual tour was developed and launched on the official website of the Faculty of Family and Community Sciences on 11th March 2021, 158th Birth Anniversary of His Highness Maharaja Sayajirao Gaekwad-III.

To know the extent of respondents' satisfaction regarding a developed virtual tour for the selected educational heritage hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central city, Vadodara, "respondent's satisfaction scale" was developed and used for collecting the data.

The extent of Satisfaction experienced by the respondents concerning various aspects of the virtual tour, the data revealed that the majority of the respondents were highly satisfied with Aspect 1:Visual Attributes, Aspect 2: Technology Feature, Aspect 3:Quality of Narration and Aspect 4:Content of Narration of selected Spots.

Regarding respondents' overall satisfaction related to virtual tour, it was found that "virtual reality experiences of the developed virtual tour", "360' panoramic photography of the developed virtual tour" and "sequencing of spots of the developed virtual tour" scored highest on respondents' overall satisfaction scale. Whereas, "self-managed feature of the developed virtual tour", "time is taken for uploading of the virtual tour on your gadget", "controlling system of arrow and cursor of the developed virtual tour", "size, style and colour of direction tag used for the developed virtual tour",

"synchronization of narration with the music of developed virtual tour" and "pixel of panoramic photography for developed virtual tour" scored second highest on respondents' overall satisfaction scale. While "quality of narration of the developed virtual tour" and "time is taken for the narration of for developed virtual tour" scored third highest on respondents' overall satisfaction scale.

To find out the variation between the extent of satisfaction experienced by the respondents' regarding the virtual tour with their personal variables namely education, and situational variable namely gadgets used by the respondents' ANOVA was computed. The finding depicted that, the computed F-ratio for the selected personal variables "education" of the respondents was found to be not significant with the extent of respondents' satisfaction regarding various aspects of Virtual Tour. However, the situational variable "gadget used by the respondents" was found to be significant at 0.02 level. Additional, Scheffe's test was computed to find out the variations between the extent of satisfaction experienced by the respondents' regarding the virtual tour with the types of gadgets used by the respondents. The result revealed that regarding the extent of satisfaction experienced, those respondents who used smartphone differed significantly from those respondents who used laptop, or other gadgets like Tab, Virtual Headset. Further, 't' test revealed that a highly significant difference was found in the extent of satisfaction experienced by the respondents' due to gender at 0.000 level as 't' calculated was higher than 't' tabulated.

Implications:

For the Authorities of the Tourism Corporation of Gujarat Limited

The result of the study revealed that there was high satisfaction of the student's regarding virtual tour and narration developed for the selected education heritage hubs established by His Highness Maharaja Sayajirao Gaekwad-III in Central City, Vadodara, which implies that, the majority of the student's liked the virtual tour developed for the selected spots. Therefore, a similar kind of Virtual tour and narration can be developed for the various heritage buildings established by the Geakwads situated in a different area of

Vadodara which will provide valuable experience to the tourist, visitors and students interested in heritage tourism. In 2009 a tourist bus facility was launched by the TCGL to conduct a tour of the important heritage sites and monuments in the city, known as Vadodara Darshan but it is evident that due to this covid-19 pandemic actual tourism is not advisable, therefore this kind of virtual tours can be the game changers for the tourist department.

For the Field of Family and Community Resource Management

The field of Family and Community Resource Management is concerned with the effective management of Family as well as Community Resource. The data of the present study set a live example of promotion of community resources of the city i.e., the heritage destination belonging to The Gaekwads by implementing an organized itinerary and communication technology in form of virtual tour and narration. Similar kind of small projects can be incorporated into the curriculum of subjects like Travel and Tourism, Communication Technology, Travel Agency and Tour Operations.

For the students studying in the field of Travel and Tourism

The outcome of the present study will benefit the students of Family and Community Resource Management of Hospitality Management steam, studying courses like Travel and Tourism, Communication Technology and its application to the practical field. The methods and procedures adopted in the present study for identifying heritage spots, developing tour itinerary, development of virtual tour and content development for narration can be utilized by the students studying in the field of Travel and Tourism and Heritage Management.

For Professionals of Travel and Tourism Industry

The result of the present study will be helpful to the professionals like heritage destination managers in the promotion and conservation of heritage sites, creating awareness about the heritage and providing insight for planning and development of heritage sites. The results of the study will also be useful to the Tour and Travel Agency with educational heritage destination in

developing skills of organizing virtual tours, developing narration and utilization of narration methods.

Recommendations

1) A similar kind of research can be conducted for various other heritage destination having religious, cultural or historical importance.

2) Research can be conducted on assessment of the impact of COVID-19 and opportunities for VR based tourism economy.

3) Research can be conducted regarding the quality of virtual reality and its impacts on the behavioural intention of tourist.

4) Research can be conducted regarding exploring the implications of virtual reality technology in tourism marketing

5) A study can be carried out to assess the problem faced by students during virtual tour experiencing the selected educational heritage destination.

6) A comparative study can be done to assess the effectiveness of the various method of virtual experience.

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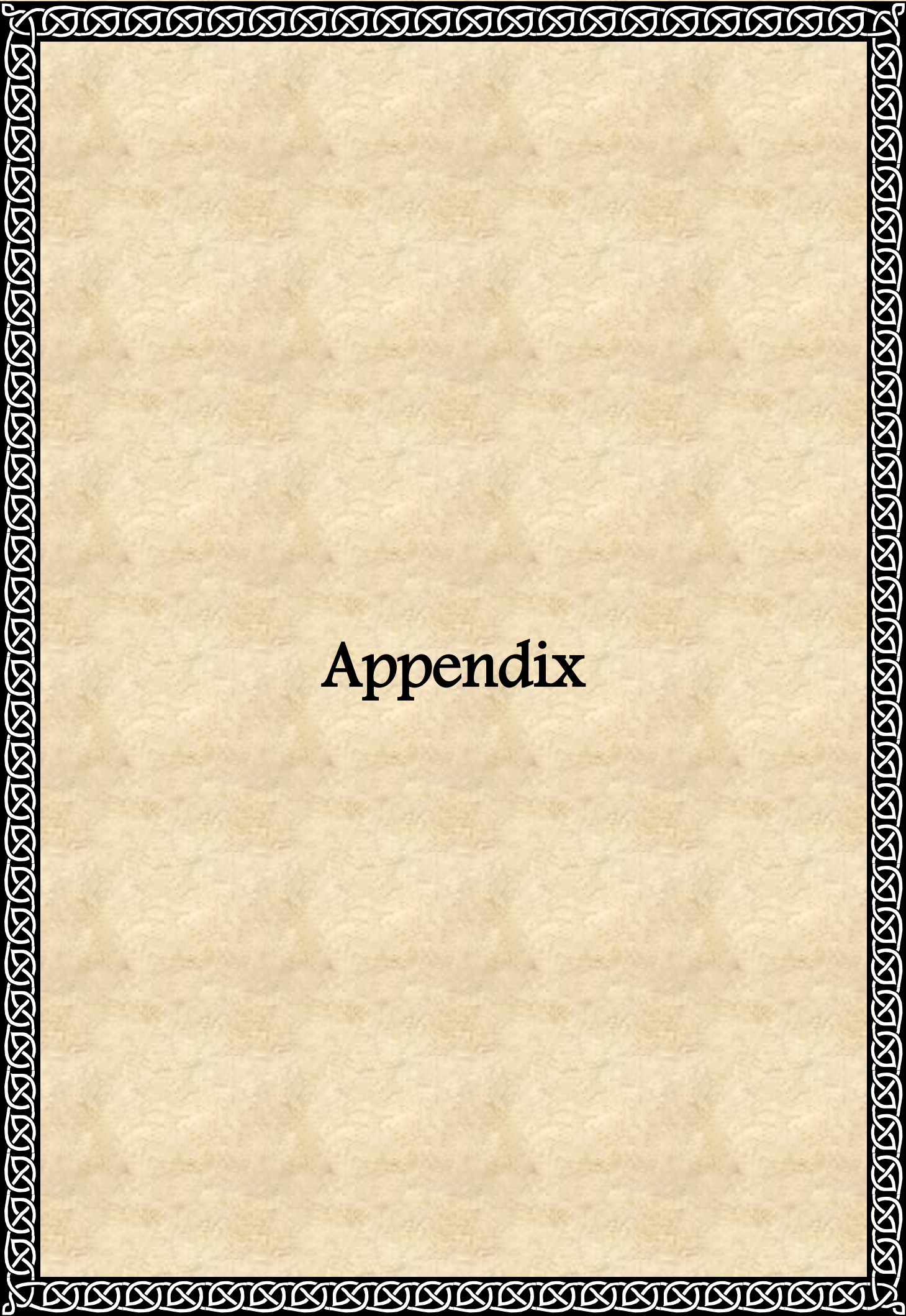Autonomy_in_Punjab_during_British_India_1937-47 on 15th March, 2021.

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Appendix

DEVELOPMENT OF VIRTUAL TOUR FOR EDUCATIONAL HERITAGE HUBS ESTABLISHED BY HIS HIGHNESS MAHARAJA SAYAJIRAO GAEKWAD III IN CENTRAL CITY, VADODARA

DATA COLLECTION TOOL

Date: _____

Form No: _____

SECTION I

BACKGROUND INFORMATION

1. **Name of the Respondent:** _____

2. **Location:** _____

3. **Education Level:**

   Diploma ☐

   Graduate Completed ☐

   Post Graduate Completed ☐

   PHD ☐

   Any other ☐

   Please indicate _____

4. **Name of the Institution:** _____

5. **Name of the Faculty:** _____

6. **Which gadgets do you use to watch virtual tour?**

   Smartphone ☐

   Laptop ☐

   Tab ☐

   Virtual reality headset ☐

   Any other ☐

   Please indicate _____

SECTION II:

USERS' SATISFACTION SCALE RELATED TO VISUAL, TECHNOLOGY FEATURE AND INTERPRETATION DEVELOPED

The following statements are developed to know the extent of Satisfaction regarding the virtual tour. The statements will be analyzed through a response structure satisfied, very satisfied, Neutral, Dissatisfied or very dissatisfied.

Sr No	Statements	Very Satisfactory	Satisfactory	Neutral	Dissatisfactory	Very Dissatisfactory
Aspect 1: Visuals						
1.	Clarity of the image/ Picture.					
2.	The realness of the image/picture.					
3.	Sequencing of the image/picture.					
4.	The angle of the Images/photos					
5.	The zooming of the images/ picture.					
6.	The overall quality of images.					
Aspect 2: Technological Feature						
1.	Zooming Sense of virtual technology.					
2.	360' angles rotation feature.					
3.	Speed of scene movement.					
4.	Arrows or direction feature.					
5.	Arrow's placement of the Virtual tour.					
6.	Linking feature of the Virtual tour					
Aspect 3: Voice Quality Of Narration						
1.	Voice Clarity of the narrator.					
2.	The vocal pace of the Narrator.					
3.	The pitch and volume of the narrator.					
4.	Speed of Speech of the narration.					

5.	The background music of the recording.					
6.	Pronunciation of the narrator.					
7.	Fluency Languages of the narrator.					
8.	The overall voice quality of the narrator.					
Aspect 4: Content of Narration of the Spots						
1.	Completeness of information used for narration.					
2.	The authenticity of information used for narration.					
3.	Languages used for narration.					
4.	Sequencing of narration.					
5.	Effectiveness of narration.					
6.	Elaboration of stories about people /place related to sports.					
7.	Synchronization of narration with visualization.					

SECTION III- OVERALL SATISFACTION REGARDING VIRTUAL TOUR

The following statements are developed to know the overall satisfaction regarding the virtual tour. The statements will be analyzed through a response structure least satisfied, moderately satisfied and highly satisfied.

Sr. No	Statements	Least Satisfactory	Moderately Satisfactory	Highly Satisfactory
1.	How satisfied are you with the quality of the virtual tour?			
2.	How satisfied are you with the time taken for narration?			
3.	How satisfied are you with the time taken for uploading the virtual tour on the gadget?			
4.	How satisfied are you with controlling the system arrow and cursor?			
5.	How satisfied are you with the 360' panorama photography?			
6.	How satisfied are you with the sequencing of sports?			
7.	How satisfied are you with the size, style and colour of the direction tag used for developing a virtual tour?			
8.	How satisfied are you with the self-managed feature of the developed virtual tour?			
9.	How satisfied are you with virtual reality experiences?			
10.	How satisfied are you with the overall pixel of photography used for the developed virtual tour?			
11.	How satisfied are you with Synchronize of narration with visualization for the developed virtual tour?			

Abstract

ABSTRACT

India has a rich tradition of education right from ancient times. Education has always been given prodigious importance in Indian society. Since the times of the Vedic Civilization with Gurukuls and Ashram being the centres of learning and with evolving times, a large number of centres of learning were established across ancient India. The educational heritage, both tangible and intangible, represents value systems, beliefs, traditions and lifestyles of society which is being transmitted from one generation to another. This fascinates many inbound and outbound tourist and knowledge seekers to visit these heritage destinations. Thus, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life are indispensable.

Apart from cultural education, people are also fascinated by the indigenous crafts and artistries of India. Therefore, conservation, interpretation, presentation and promotion of these treasure troves of history which are lost amongst the chaos of everyday city life are essential. Planned promotional activity plays a significant role to attract tourists to heritage destinations. Many developed and developing countries have successfully adopted profile-raising concepts and tools to promote and attract tourists to heritage destination in their countries amongst which virtual tours have proven to be the game changers.

A virtual tour is a computer and electronic technology used to create a new world, a seemingly realistic simulation environment, through a variety of sensing devices, which users can use according to their feeling. The virtual tours are customer-centric marketing and promotion method which have revolutionized the way of presenting and promoting the heritage sites. These virtual tours offer scholars, students and visitors unprecedented access to architectural, historical, geographical, archaeological, and anthropological data that maximize visitors' engagements, offering the modern visitors, a chance to virtually visit a place before making their final decision. These technologies provide an interesting and attractive channel through which it is possible to educate or inform a wide audience about historic artefacts or sites to assist audiences in visiting sites that are difficult to access in real life.

A virtual tour consists of a panoramic photography application that allows users to interact with the panorama, for example, rotating it in all directions, from the floor to the ceiling, to go from one room to another, to zoom on the image, etc. Additionally,

multimedia information and hyperlinks are also incorporated to provide more in-depth information so that the final presentation is enriched. A virtual tour allows the users to appreciate heritage assets with an immersive experience. People who cannot travel due to any reason can still enjoy the same experience in a safe and protected environment. Virtual Tour offers professional tour operator and commercial advertisers of heritage destinations, a unique opportunity to promote their presentations, websites and online marketing messages directly to the prospective audience. High quality virtual tour impresses the viewer deeply and keeps them on the website for a long time which is a key factor to gain new customers and retain old customers. Virtual tours are a smart promotion strategy. The virtual tour works throughout and enhances the value of the destination through its Internet presence.

Vadodara is the third-largest city in the Indian state of Gujarat. His Highness Maharaja Sayajirao Gaekwad-III, who ruled from 1875 to 1939, did much to modernize Baroda, establishing compulsory primary education, a library system, a university, and model textile and tile factories, which helped to create Baroda's image as a modern education as well as an industrial hub. Amongst his great initiatives of socio-economic reforms one the most significant was education. Various educational hubs were established by His Highness Maharaja Sayajirao Gaekwad-III in the Central Vadodara city during his era. These educational structures have a great legacy of more the 80 years. Undesirably the history of these treasure troves has lost in the chaos of city life. virtual tours with multimedia elements such as sound effects, music, narration, and text give a filling of immersive and engaging virtual experiences.

Keeping this perspective in mind to promote and to tell the history of the educational heritage hubs established by His Highness Maharaja Sayajirao Gaekwad-III a Virtual Tour of Educational Heritage Hub established by His Highness Maharaja Sayajirao Gaekwad-III in Central city, Vadodara was developed and launched on the official website of Faculty of Family and Community Sciences on 11th March 2021, 158th Birth Anniversary of His Highness Maharaja Sayajirao Gaekwad-III.

The objectives of the study were to collect and synthesise information regarding selected Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad- III in the Central City, Vadodara. To develop a virtual tour for the selected Education Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad III in Central City, Vadodara. To assess the extent of satisfaction experienced by the users

regarding the selected aspect of virtual tour developed for Educational Heritage Hubs established by H.H. Maharaja Sayajirao Gaekwad III in Central City, Vadodara.

The research design descriptive in nature. The sample size of 120 respondents' who were willing to participate in the virtual tour. The data were collected by Google form was considered to be the most suitable tool for data collection. The data were analyzed by applying descriptive (frequency, percentage, mean, and Standard deviation) as well as relational statistics (Analysis of Variance, and 't' test).

The major finding of the present study revealed that the majority of all the aspects of developing virtual tour highly satisfied. Regarding respondents' overall satisfaction related to virtual tour, it was found that "virtual reality experience of the developed virtual tour", "360' panoramic photography of the developed virtual tour" and "sequencing of spots of the developed virtual tour" scored highest on respondents' overall satisfaction scale. Whereas, "self-managed feature of the developed virtual tour", "time is taken for uploading of the virtual tour on your gadget", "controlling system of arrow and cursor of the developed virtual tour", "size, style and colour of direction tag used for the developed virtual tour", "synchronization of narration with the music of developed virtual tour" and "pixel of panoramic photography for developed virtual tour" scored second highest on respondents' overall satisfaction scale. While "quality of narration of the developed virtual tour" and "time is taken for the narration of for developed virtual tour" scored third highest on respondents' overall satisfaction scale.