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Title of the Dissertation: DESIGNING OF HOUSEHOLD EQUIPMENT MUSEUM IN THE DEPARTMENT OF FAMILY AND COMMUNITY RESOURCE MANAGEMENT, FACULTY OF FAMILY AND COMMUNITY SCIENCES, THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

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**DESIGNING OF HOUSEHOLD EQUIPMENT MUSEUM IN
THE DEPARTMENT OF FAMILY AND COMMUNITY
RESOURCE MANAGEMENT, FACULTY OF FAMILY AND
COMMUNITY SCIENCES, THE MAHARAJA SAYAJIRAO
UNIVERSITY OF BARODA**

APRIL 2025

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COMMUNITY SCIENCES, THE MAHARAJA SAYAJIRAO
UNIVERSITY OF BARODA**

A Dissertation

Submitted to

The Maharaja Sayajirao University of Baroda, Vadodara

In partial fulfilment for

The Degree of Masters in Family and Community Sciences

(INTERIOR DESIGN)

By

GAUTAM SUTHAR



NAAC Accredited 'A+' Grade

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Vadodara

April 2025



DEPARTMENT OF FAMILY & COMMUNITY RESOURCE MANAGEMENT
FACULTY OF FAMILY & COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA,
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CERTIFICATE

This is to certify that the thesis entitled "**DESIGNING OF HOUSEHOLD EQUIPMENT MUSEUM IN THE DEPARTMENT OF FAMILY AND COMMUNITY RESOURCE MANAGEMENT, FACULTY OF FAMILY AND COMMUNITY SCIENCES, THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA**" submitted for partial fulfilment of the requirement for the degree of Masters in the Faculty of Family and Community Sciences (Family and Community Resource Management) to the Maharaja Sayajirao University of Baroda, carried out by Mr. Gautam Suthar is her original bonafide work.

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Ethical Compliance Certificate 2024-2025

This is to certify Mr. Gautam Suthar study titled; "Designing of Household Equipment Museum in the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda." from Department of Family and Community Resource Management has been approved by the Institutional Ethics Committee for Human Research (IECHR), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The study has been allotted the ethical approval number IECHR/FCSc/M.Sc./10/2024/26.

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ACKNOWLEDGEMENT

At the onset, I am obliged to almighty God for giving me the ability, capacity, strength and resources. Each moment during this work, I experienced the Grace of God, who continuously enhanced my intelligence even at the moments of despair, inspired me to move forward and enlightened my thoughts with wisdom.

I would like to thank the Faculty of Family and Community Sciences, the Maharaja Sayajirao University of Baroda, for affording me the un-imaginable opportunity to complete my study here.

Immeasurable appreciation and deepest gratitude for help and support are extended to the following persons who have contributed in making this study.

I am writing to express my sincere gratitude to my guide **Ms. Rutu Modi**, for your invaluable guidance and support throughout the process of completing my thesis. Your expertise and encouragement were instrumental in my success. She helped me navigate the complexities of research, sparked new ideas, and instilled in me a deeper understanding of my subject. The dedication she poured into my success is something I will never forget. Her willingness to share knowledge and insights, as well as your unwavering belief in my abilities, inspired me to push my boundaries and achieve my goals. I am truly grateful for your time and effort you invested in me.

I would like to express my deepest gratitude to **Dr. Sarjoo Patel**, I/C Head of Department of Family and Community Resource Management, for her invaluable support throughout my dissertation journey. Her guidance, wisdom, and encouragement have played a significant role in helping me navigate the challenges and obstacles I faced during my research. Ma'am always provided me with right direction at every step which enabled me to stay focused and on the correct path. Her constant support and insightful feedback have contributed immensely to the successful completion of this dissertation. I am truly grateful for her mentorship, and I consider myself fortunate to have had the opportunity to learn from her.

I extend my heartfelt gratitude to **Dr. Vashima Veerkumar** and **Ms. Alinda Kashyap** for their invaluable support in curating and executing the museum. Their dedication in assembling the collection of utensils and meticulously labelling them with their origin and material has been instrumental in bringing this project to life. Without their

ACKNOWLEDGEMENT

guidance and efforts, this museum would not have taken the shape it has today. I sincerely appreciate their contributions and extend my deepest thanks to both of them.

I am also very thankful to **Dr. Mona Mehta, Dr. Shilpi Saraswat, Dr. Urvashi Mishra, Ms. Neha Rathore, Dr. Khyati Trivedi, Dr. Smita, Ms. Rakhi Dasgupta and Ms. Kavita Shah** and all of the teachers who gave invaluable feedback and insights.

My companions **Mr. Gaurang Parmar, Mr. Riddhesh Sheth, Ms. Stuti Dave, Ms. Maitri Chokshi, and Ms. Prusti Patel** deserve special recognition for their constant help, support, and fellowship during the whole journey. Their presence and support made the hurdles seem manageable. Their willingness to provide a helping hand when required has been much appreciated.

To my father and mother, **Mr. Ramprasad Suthar and Mrs. Sita Suthar** my pillar of strength, whose unfailing faith in my skills has been an endless source of inspiration. His support and smart advice have helped keep me focused and committed during this journey. I extend my heartfelt thanks to my brother, **Sonu**, for his enduring trust in me and unfailing support. His encouragement and support have been a source of strength, motivating me to overcome every challenge.

A heartfelt thank you to the non-teaching staff **Mr. Ishwar bhai Patel, Mr. Robinbhai Christian, Mr. Ajit Bhai, Mr. Mukesh bhai, and Mrs. Ansuya** for their constant help. Their contributions behind the scenes were essential for the successful completion of this thesis.

Besides this, I would like to extend my gratitude to one and all who have knowingly or unknowingly, directly or indirectly helped me in making my work worth presentable.

With profound gratitude,

Mr. Gautam Suthar

ACKNOWLEDGEMENT

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INTRODUCTION



CHAPTER I

INTRODUCTION

Study the past and you would define the future- Confucius

'A generation which ignores history has no past—and no future.' — Robert A. Heinlein

Museums

“A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.”

Extraordinary General Assembly of ICOM (2022)

Museum is an institution dedicated to preserving and interpreting the primary tangible evidence of humankind and the environment. In its preserving of this primary evidence, the museum differs markedly from the library, with which it has often been compared, for the items housed in a museum are mainly unique and constitute the raw material of study and research¹.

In many cases they are removed in time, place, and circumstance from their original context, and they communicate directly to the viewer in a way not possible through other media. Museums have been founded for a variety of purposes: to serve as recreational facilities, scholarly venues, or educational resources; to contribute to the quality of life of the areas where they are situated; to attract tourism to a region; to promote civic pride or nationalistic endeavor; or even to transmit overtly ideological concepts. Given such a variety of purposes, museums reveal remarkable diversity in form, content, and even function. Yet, despite such diversity, they are bound by a common goal: the preservation and interpretation of some material aspect of society's cultural consciousness¹.

1.1 Role of Museum

The primary role of a museum is to be a source of education, whether it be through showcasing collections of cultural products such as pieces of art, telling the story of something.

Museums is a place where things are collected, kept in safeguard and is then made accessible to the society. Museums provide a learning which is quite different from classroom education. It also aids in enhancing the experience of the students towards the subject. They are a medium where students can always achieve free choice learning.

1.2 Household Equipment: An Overview

Appliances which aid in doing household work are known as Household equipment. Equipment are categorized into two categories namely Electrical and Non-Electrical. Electrical equipment comprises of items like toaster, mixer, immersion rod, iron, refrigerator, washing machine, geyser, etc. which cannot work without electricity. Non- electrical are that equipment which do not need electricity to run. This category consists of kitchen utensils of different materials, spatulas, cooking stove, solar cooker and manual tools used for peeling, straining, chopping, etc.

Household equipment categorizes into numerous and varied electric, electromechanical, or gas-powered devices which were introduced in the 20th century to save labour and time in the household. Household equipment have had little or no effect outside the world's urban communities, but within these communities they have had a profound, even revolutionary, impact in social and economic terms. The invention in the devices has facilitated the smooth running of households. The trend toward using automatic and powered household implements to ease basic housekeeping chores, once established, soon extended into such additional fields as personal hygiene and grooming (Britannica,2024). Equipment plays a huge role in an individual life.

1.3 Importance of Household Equipment Museum

A Household Equipment Museum plays a crucial role in preserving history, educating the public, and showcasing the evolution of domestic life. It serves as a bridge between the past and the present by displaying household tools and appliances that have shaped everyday living. These museums highlight how

domestic equipment has transformed over time, from simple manual tools to modern automated devices. By preserving such artifacts, they offer valuable insights into past lifestyles, traditions, and technological advancements (Clark, 2018).

One of the key benefits of a Household Equipment Museum is its educational value. It provides an opportunity for students, researchers, and visitors to learn about the development of household technology and its impact on daily life. It helps people understand how past generations managed household tasks without the convenience of modern appliances. Additionally, these museums highlight the role of domestic equipment in shaping cultural and social norms, including family structures and gender roles across different societies (Gordon & Johnson, 2020).

Beyond education, these museums also serve as an inspiration for modern design and sustainability. Many traditional household tools were designed with efficiency and durability in mind, often using eco-friendly materials. By studying these historical items, designers and manufacturers can gain insights into sustainable practices that can be applied to modern innovations. Moreover, the museum showcases the impact of industrialization and technological advancements on domestic life, helping visitors appreciate the convenience of modern appliances while understanding the effort and creativity that went into earlier designs (Peterson, 2017).

A Household Equipment Museum can also contribute to tourism and the local economy. It attracts history enthusiasts, scholars, and tourists who are interested in learning about the evolution of household technology. Through guided tours, exhibitions, and interactive displays, visitors can engage with history in an immersive way. Additionally, these museums often host workshops, special events, and educational programs that further enrich the learning experience (Smith & Walker, 2019).

Overall, a Household Equipment Museum is more than just a collection of old objects—it is a valuable institution that preserves cultural heritage, educates future generations, and inspires innovation. By understanding the past, we can gain a deeper appreciation for the comforts of modern life and find ways to create a more

sustainable future.

1.4 Benefits of Household Equipment Museum

Household equipment museums will offer a richness to student education that traditional classroom methods simply cannot provide; while classroom teachers are certainly able to provide rigorous, well-rounded curriculum and lay the foundational framework for essential skills, museums allow for deeper context and foster the application of such knowledge and skills. “Museums, with their real artifacts, dioramas, and immersive exhibitions provide a uniquely positive environment to foster learning,” which can both complement and build upon classroom work, notes a study by The Museum Group (Munley, 2012).

Learning in museums incorporates several pedagogical methods that have been shown to improve student learning and social development as they gain cross-curricular skills such as critical thinking, problem solving, peer collaboration, and historical and cultural empathy, among others. Learning via such displays enables constructive and sociocultural learning and create opportunities for active, authentic, and inquiry-based learning¹.

It is the need of hour to focus on preserving indigenous art and art forms, thus to inculcate knowledge of the various traditional materials and indigenous household equipment practices, the museum will be designed to enrich the knowledge and maintain a sense of community among the younger generation. By underemphasizing this museum on Household Equipment’s, an initiative is being made to address the interdisciplinary nature of the entire education system. Museums have generally evolved to keep up with emerging theories on teaching and learning, making them invaluable educational sites as they place an emphasis on exactly these skills that experts identify as being mishandled in the traditional school system².

Museum exposure creates immense progress toward historical empathy and tolerance, which may inspire people to become more civically engaged by getting involved in their communities and with its members to spark change Munro (2013). It also refers to museums as “spaces of care”, which perfectly encapsulates the broad inclusivity and support that many museums offer to their respective communities via outreach and engagement programs (Weber, 2022).

Justification of the Study

With urbanization and industrialization, the availability of indigenous utensils is decreasing day by day. As average homemaker performs all the household chores herself. Mechanization of each equipment is being invented for ease of individuals due to change in dynamics of family living. Due to the new lifestyle of living in nuclear families and lack of time on hand of homemakers, the changing roles of males and females in modern family living are some of the reasons of diminishing cultural and indigenous utensils and equipment's. With the modern lifestyle, the mortar is replaced with the food processor, chulas are being replaced with hob, an iron kadhai is being replaced with the nonstick pans. Modern equipment has radically altered the physical demands on homemaker's energy. Refrigerators, washing machines, televisions, irons, blenders and mixers, toasters, pressure cooker, microwave ovens and other such equipment are becoming part of Indian homes especially those in urban areas and working homemakers. The number of household equipment and appliances are increasing in modern homes which is resulting in diminishing purchase of old nonmechanical household equipment.

The review of literature revealed that studies on areas such as Household equipment its challenges (Lovinghood and Lytton, 1984); Development of the continuing education for museum staff in Scandinavia (Sonne et al., 2023); Museum development in Bosnia and Herzegovina as an indicator of the positive socio-cultural impact of tourism (Zunic et al., 2023); evolution and development of museum buildings (Kurbatova et al., 2023); cultural heritage museums in community development (Abiodun, 2024); Development of Museums as Tourism Attraction based on Virtual Digital in Ubud Bali (Angana,2024); Museum based sleep education: development and evaluation of Popup exhibits for children and families (Le Blanc et al.,2024); activities of modern school museums along the path of dep digitalization and methodical development of personalized educational environment (Красанов , 2024); Prerequisites and Trends in the Development of Virtual Museums in the XXIST Century (Trofimova and Kazakova, 2024); The Role of Cultural Heritage Museums in Community Development (Abiodun, 2024). The review revealed that studies were done outside India. A dearth of research was found on the design development of museum on Household Equipment thus, the present study was formulated.

The present study will aid in design development of museum on Household Equipment for the Department of Family and Community Sciences, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The museum will be an asset to the curation of various household equipment's of numerous base materials like iron, brass, copper. The museum will also house a variety of traditional and indigenous household equipment's. The museum will act as a learning tool to the students by showcasing a varied variety of household equipment's with their history, use, care and maintenance.

Statement of the Problem

The present study aims to propose a design of Household Equipment Museum in the Department of Family and Community Resource Management, Faculty of Family and Community Sciences

Objectives of the study

1. To assess the existing space assigned for Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.
2. To develop a detailed design and cost estimation of the Household Equipment Museum.
3. To implement the design proposed by the researcher for Household Equipment Museum.
4. To assess the opinion of interior designers and Architects regarding the appropriateness of selected aesthetic and functional attributes of Household Equipment Museum in the Department of Family and Community Resource Management.

Hypothesis of the Study

1. There exists variation in the opinion of the respondents regarding designed Household Equipment Museum with their selected Personal Variables (Age, gender, occupation and educational qualification) and work variables (years of experience, number of projects undertaken by the professionals)

Delimitations of the study

1. The study was limited to the Architects and Interior Designers of Gujarat State.
2. The study was limited to the Architects and Interior Designers with an experience of 2 years.

REVIEW OF LITERATURE



CHAPTER - II

REVIEW OF LITERATURE

Review of literature plays a vital role in any scientific study. The main aim of the present research is to design household equipment museum in The Department of Family and Community Resource Management, Faculty of Family and Community. A review is an overview of the work done on the subject by qualified scholars and researchers. The chapter presents the major areas of related literature, survey, scholarly articles, books, and other sources relevant to a particular problem, area of research, or theory, providing a description, summary, and critical evolution of each work. To make the review clear and understandable, the current chapter is divided into the following sections:

2.1 Theoretical Orientation

Theoretical literature consists of

- 2.1.1. Museums: An Overview
- 2.1.2. Phases of Development of Museum
- 2.1.3. Types of Museums
- 2.1.4. Scope of Museums
- 2.1.5. Functions of Museums

2.2 Related Researches

- 2.2.1. Researches conducted outside India
- 2.2.2. Researches conducted within India

2.1 Theoretical Orientation

The theoretical orientation section describes the literature content related to the topic of the study.

2.1.1 Museums: An Overview

Museums today are an important source of tourist attraction. Objects and artefacts revealing the genesis of a country, its cultural expanse, landmarks of its industrial and technological development are housed in the museums. Now concepts in museology have emphasized the social responsibilities of the museums towards educating and entertaining the public. All over the world the number of museums as well as the number of the people visiting them have increased substantially. The attraction of the museums for the public has increased².

The concept of the modern museum is primarily a collection and exhibition centre for antiquities, artefacts and other historical and cultural objects was developed in Europe, institutions with some resemblance to them have been found in India too^{1,3}.

The earliest organized museum was established at Alexandria, Egypt in about 3rd century R.C. by Ptolemy Soter, a ruler of Egypt in the post-Alexander era. For a long time after this, no proper museum development took place. The first public museum opened in Oxford in 1683 using the collections of Mr. Elias Ashmole. It was followed by the British Museum in 1753. In France also, the Louvre Museum allowed limited entry to the people until the French Revolution in 1789 opened it fully for the public. In the United States the development of museums is comparatively recent³.

In ancient India there were painting galleries (chitrashalas) and art galleries (chitravithis). During the medieval period the kings and nobles had their impressive private collections. The beginnings of the first modern museum in India can be traced back to the year 1796. The most important development was the establishment of the National Museum in Delhi in 1949. By 1995, the number of museums in India had increased to around 360³.

Museum, is an institution dedicated to preserving and interpreting the primary tangible evidence of humankind and the environment. In its preserving of this primary evidence, the museum differs markedly from the library, with which it has often been compared, for the items housed in a museum are mainly unique and constitute the raw material of study and research. In many cases they are removed in time, place, and

circumstance from their original context, and they communicate directly to the viewer in a way not possible through other media. Museums have been founded for a variety of purposes: to serve as recreational facilities, scholarly venues, or educational resources; to contribute to the quality of life of the areas where they are situated; to attract tourism to a region; to promote civic pride or nationalistic endeavor; or even to transmit overtly ideological concepts. Given such a variety of purposes, museums reveal remarkable diversity in form, content, and even function. Yet, despite such diversity, they are bound by a common goal: the preservation and interpretation of some material aspect of society's cultural consciousness.

2.1.2. Phases of Development of museums

The museums have emerged during the Renaissance and expanded during the Age of Enlightenment in Europe. There are four phases of museum development:

i) **First Phase:** Initially they mainly served the function of storing the objects of artistic and scientific interests. This was the first phase starting from the 14th century up to around the 17th century^{2,3}.

ii) **Second Phase:** It started during the 18th and 19th Centuries when many of the museums were taken over by the state which turned them into public institutions. The effort was to project the glory of newly industrializing nations and expanding imperial powers^{2,3}.

iii) **Third Phase:** During its third phase in the 20th century the museum assumed an educational role. Through the selection of objects, their arrangement and exhibitions, the museums endeavored to educate the public about their history, culture, scientific and technological traditions^{2,3}.

iv) **Fourth Phase:** There is an onset of the phenomenon of mass tourism, the aim of the museums became "more concerned with entertainment, tourism and income generation"².

2.1.3. Types of Museums

Apart from the museums the other institutions which conform to this definition are:

- i. **General Museums:** Most of the Museums come under this category. Their collections include articles of various types ranging from ancient to modern times, encompassing sculpture, painting, jewellery, pottery, technological implements etc. They have something or the other for almost everyone. Some important museums of this category are:
 - **National Museum, New Delhi:** This museum possesses a very large number of objects which include sculptures of terracotta and bronze as well as potteries and jewellery from the Harappan, Mauryan and Gupta periods; sculptures, manuscripts, paintings from the medieval period, A collection of antiquities from Central Asia and the America; A large collection of textiles, jewellery and coins from different ages and regions^{2,3}.
 - **Prince of Wales Museum, Bombay:** It has sculptures, painting, textiles, a natural history section, etc. from various periods of Indian History^{2,3}.
 - **Indian Museum, Calcutta:** Its most notable collections are 2nd century B.C. railings containing Buddhist sculptures from Bharhut in Madhya Pradesh. Apart from these, it has a collection of textiles and sections on mineralogy, zoology and anthropology. Archaeological museums such museums mostly contain articles discovered from the local excavations. Many of them are site museums maintained by the Archaeological survey of India. Some important museums include Archaeological Museum at Red Fort, Delhi, at Bodh Gaya and Nalanda in Bihar, at Sanchi, Khajuraho and 'Gwalior in Madhya Pradesh and at Mathura and Sarnath in Uttar Pradesh, etc^{2,3}.
- ii. **Art Museum:** These museums mostly possess works of arts which include sculpture, painting etc., the important among them are the Ashutosh Museum of Art (Calcutta) and National Gallery of Modern Art (New Delhi) ^{2,3}.
- iii. **Crafts Museum:** These museums endeavour to popularize the crafts traditions of India and provide the craftsmen direct access to the consumers. National Crafts Museum in Pragati Maidan, New Delhi is the most prominent example^{2,3}.
- iv. **Children's Museum:** These museums house objects mainly of children's interests. Bal Bhawan and International Dolls Museum are two such

museums².

- v. **Defense Museums:** Their collections comprise of the objects relating to national defense. For the same, National Defense Academy Museum, Pune and Air Force Museum, Palam, New Delhi are important examples^{2,3}.
- vi. **Personality based Museums:** These contain articles used by or related to some important persons. Gandhi Memorial Museum and Nehru Memorial Museum in Delhi are two such institutions^{2,3}.
- vii. **Natural History Museums:** Flora and fauna of the world, objects showing the major landmarks in the development of the earth form parts of their collection. National Museum of Natural History in New Delhi is the most important museum of this kind^{2,3}.
- viii. **Science and Technology Museums:** A Science and Technology Museum is a specialized institution that showcases scientific discoveries, technological advancements, and their impact on society. For example, Central Museum, Pilani (Rajasthan), Visvesvaraya Museum, Bangalore and Rail Transport Museum, New Delhi^{2,3}.
- ix. **Archaeology museums:** They display archeological artifacts. They can be open-air museums or exhibit items in a building^{2,3}.
- x. **Encyclopedic museums:** They are usually large institutions and offer visitors a wide variety of information on many local and global themes. They are not thematically defined or specialized^{2,3}.
- xi. **Historic house museums:** A house or a building turned into a museum for various reasons, most commonly because the person living in it was important or something important happened. House is often equipped with furniture as it was used in the past. Visitors of the house learn through guides that tell the story of the house and its inhabitants^{2,3}.
- xii. **History museums:** They collect objects and artifacts that tell a chronological story about the locality. Collected objects could be documents, artifacts, archeological findings, and others. They could be in a building, a historic house, or a historic site^{2,3}.
- xiii. **Maritime museums.** Specialized museums for displaying maritime history, culture, or archaeology. Primarily maritime archaeological museum's exhibit artifacts and preserved shipwrecks recovered from bodies of water. Maritime history museums show and educate the public about humanity's maritime

past^{2,3}.

- xiv. Military and war museums:** Museums specialize in military histories and are usually organized from the point of view of one nation and conflicts in which that country has taken part. They collect and present weapons, uniforms, decorations, war technology, and other objects^{2,3}.
- xv. Mobile museums:** Museums that have no specific strict place for exhibiting. They could be exhibited from a vehicle or moved from museum to museum as guests—a name for parts of a museum's exhibitions sent to another museum^{2,3}.
- xvi. Natural history museums:** These museums usually display objects from nature like stuffed animals or pressed plants. They educate about natural history, dinosaurs, zoology, oceanography, anthropology, evolution, environmental issues^{2,3}.
- xvii. Open-air museums:** These museums are characteristic for exhibiting outdoors. Exhibitions consist of buildings that recreate architecture from the past. It first opened in Scandinavia near the end of the 19th century^{2,3}.
- xviii. Pop-up museums:** They are nontraditional museum institutions, made to last short and often rely on visitors to provide museum objects and labels, while professionals or institutions only provide themes. With that is constructed shared historical authority^{2,3}.
- xix. Science museums:** They are specialized in science and the history of science. In the beginning, they were static displays of objects, but now they are made so the visitors can participate and, that way, better learn about different branches of science³, which is called pop up museum^{2,3}.

2.1.4. Scope of Museum

A Scope is a stand-alone planning document of a museum that succinctly defines the purpose of its collection holdings at the present and for the future. It derives from the mission of the respective museum, as well as laws and regulations mandating the preservation of collections. It guides a museum in the acquisition and management of those objects that contribute directly to the museums' mission, as well as those additional collections that the museum service is legally mandated to preserve. It is the critical basis for managing museum collections.

Scope is referenced in museums' management planning, resource planning, long-range interpretive plan, and other planning documents that may affect the collection of museum objects or their use.

- A. Aims, mission, vision and objectives of the museum
 - a) Legislation of the museum is formulated
 - b) Policies and strategies are developed
- B. Collection and related information acquired
 - a) Documentation of objects in museum collection
 - b) Research
 - c) Designing Education Programme
 - d) Gallery Planning
 - e) Planning for temporary, travelling and mobile exhibition
 - f) Periodic maintenance of objects
 - g) Developing museum publication for the dissemination of information
- C. Location, architecture and public space available if museum
 - a) Planning for community development programme
 - b) Planning for community participation programme
 - c) Activity planning during special day, vacation, holidays etc. for school children or any target group
 - d) Inviting volunteers, interns, artists, experts
 - e) Participation in community programmes, fairs and festivals

2.1.4. Functions of Museum

Museum is the public service organization and deals mainly with objects—its exhibition and visitors. It has some responsibilities towards the objects and society and thus, performs manifold activities on regular basis. Image and popularity of a museum depends upon its public friendly approaches, entertainment, amusement facilities in addition to its contribution towards research and education. The various functions of a museum, which may vary from one museum to other according to the nature of collection are as follows:

- i. Collection:** Most important function of a museum is to collect objects of heritage since it is a custodian of the heritage of society or country. Every museum collects following its policies related to collection management

through various modes like, purchase, gift, loan, exchange, exploration, excavation, Treasure Trove Act, gift, bequest etc. Each museum authority adopts and publishes a written statement of its collection policy. Collection in museum, thus, depends upon the mission, vision and objectives of the museum and also on the needs of research, education, conservation, presentation of evidences of natural and cultural heritage. A museum must not collect anything that is theft, smuggled or very much fragile⁴.

- ii. **Storage:** Whatever a museum collects, need to store scientifically in a well-planned and secured area. It is an important function of all museums because only one-third of collection usually displayed, rest two-third remains within the stores. So, museum must have a good storage of its collection for the reserved collection separated for organic-inorganic objects, paintings, textiles, sculptures etc. It should be regularly supervised to keep clean, control from humidity, light effects, pest and other bio-chemical and natural hazards or disasters⁴.
- iii. **Preservation and Conservation:** Objects need regular care because every object is subject to deterioration due to spontaneous change in environment and subsequent physio-chemical factors. So, regular care is required in both display and storage following the preventive conservation or curative conservation wherever needed. Museum practices various preservation techniques, which are exclusively objects specific to protect them from attacks of organism like fungus, insects, rodents etc. and damage from humidity, temperature and light sources and intensities⁴.
- iv. **Documentation:** It is the process of preparing record of collected objects by formal entry in the Entry Register, accessioning, cataloguing and indexing with photo-images. It is considered as one of the main administrative functions of any museum. It is very important to document objects with authentic information after necessary research and consultation. It facilitates in knowing the provenance, identification, composition and necessary treatment of objects. Now various software of international standard is available to document museum objects digitally and to keep record not only for museum itself but as an online resource to know about a country's possession⁴.
- v. **Research:** Museum is the custodian of the evidences of country's heritage. For keeping and dissemination of information regarding each object, every museum needs to research on those particular objects. It is also required to preserve and

publish such information for the use of museum itself while documentation and displaying objects, and also to serve research scholars. Research scholars in the field of history or heritage need to consult various museum objects and thus, museum needs to research to keep ready reference⁴.

- vi. Exhibition:** Museum is established for exhibition of objects too, apart from collection and preservation. It is an important function of any museum and every museum exhibits objects by forming permanent galleries or organizing temporary exhibitions. Museums sometimes send their objects on a mobile exhibition through its muse-bus to reach people at distant locations and also send objects for exhibition at a museum situated in other cities or countries as travelling exhibition⁴.
- vii. Security:** Museum collects and stores antique and precious objects or piece of art which are priceless. So, strong security system needs to develop by museum against vandalism, fire, theft, burglary and natural disaster. Sometimes two-three tiers of security system are followed in museum both in galleries and stores using latest equipment, alarms, close circuit television (CCTV) under the supervision of experienced security force and disaster management team⁴.
- viii. Education and Knowledge dissemination:** Museum at the time of its inception in 3rd BCE in Alexandria was a place for philosophic discussion. Since then, it remains the place for knowledge dissemination on the subjects it is established for. Even in modern time people visit museum to see the wonders and get knowledge on it. It supports people as an informal education center for disseminating knowledge on art, history, science and technology through the material and non-material evidences. So, it is another important function of a museum to develop itself in such a way that it can serve society through knowledge dissemination⁴.
- ix. Publication:** Museum publishes many popular literatures for visitors like leaflets, folders, posters, guide books etc. Catalogues on specific museum collection, journals, art albums, monographs etc. are published by museums, which are useful for scholars. Museum also publishes bulletins, newsletters, annual reports etc. that highlights annual activities and administrative details about the museum. It is the important activity of any museum and help visitors, scholars and officials to know more about a museum⁴.
- x. Public Services:** Museum apart from exhibition also organizes various activities

for the service of society, targeting specific group of visitors as its calendar events. Science centers and museums run daily shows on relevant subjects that add knowledge to visitors on the various areas of science and technologies in addition to the static exhibitions. This kind of show attracts lot of visitors into the museum or centre for enjoyment and entertainment too. Like, Science City and Birla Industrial and Technological Museum in Kolkata. It also encourages repeat visit of visitors being a popular tourist's destination. Apart from the science centers and museums, museums on art and history are now also showing videos and documentaries in its audiovisual rooms. Like, Kolkata Police Museum shows a documentary on the history of Kolkata Police in its audio-visual room in every half-an hour during the museum days. Museums also organize several workshops, cultural programmes, activities like sit and draw, quiz, model making, paintings and many innovative activities targeting schools students, orphans, women or interested group etc. where they get entertainment and knowledge and also get a chance to know more about heritage looking at the real evidences⁴.

- xi. Outreach Activities:** Now, museums are more concerned about serving its community through its outreach initiatives in many innovative ways and taking it as one of its priorities of work. In these purposes museums send their museum-bus to remote locations to show mobile exhibitions on a particular theme to aware people either on a relevant subject or on the natural and cultural heritage of the locality or country. Museums are also coming forward to assist women of self-help group and artist community in promoting the folk art and craft making to sustain the indigenous art forms in this era of modern technologies. Museums are also coming out of its in-house operation and visiting the fields, meeting artists, common folks of rural areas and taking initiatives in preserving the intangible heritage like folklores, folk tales, folk dances, folk songs etc. Bharat Lok Kala Mandal, Udaipur Rajasthan and Gurusaday Museum, in Kolkata are the two museums which work on preserving the rural folk culture⁴.
- xii. Lecture, Seminar, Workshops:** Museums also organize lectures, seminars and workshops where they invite eminent experts to share his/her opinion in the field of heritage and culture or on a specific subject area concerned with the museum. These are the scholarly activities of a museum that helps museum professional to enhance their work potential and the research and development

of the museum. It is also the initiative of museum where the experts and researchers share their findings to each other that foster the gross knowledge base within the research community. 6. Conclusion Now, museum means an organization that stores objects of both natural and cultural heritage, cares and provides necessary conservation supports required to objects in both display and storage and exhibits objects for the knowledge of common people. Museum professionals develop scope of work related to collection and service to the community and functions accordingly to fulfill its mission and vision. It is now more a service provider rather than a static display house⁴.

2.2 Related Research Studies

2.2.1. Researches Conducted Outside India

Lovingood and Lytton (1984) conducted a study on “Household equipment research, past accomplishments and challenges for the future” with an objective to understand the challenges experienced during Household equipment researches. It was conducted continuously, but at a relatively low level, in a number of colleges and universities throughout the 75-year history of the American Home Economics Association. Researchers have responded to needs of families for information regarding new appliances or innovative features on appliances. The findings revealed that energy and consumer protection have been frequent topics in recent years. Titles of many studies prior to 1950 reflected concerns of engineers engaged in product development; those since 1950 are more reflective of the concerns of marketers.

Ahmad et al., (2013) conducted a study on “Identification of issues from the perspective views of museum scholars and experts toward creating direction in developing museum exhibitions in Malaysia for public learning”. The study focused on identification of issues based on only literature search focusing on their viewpoints on an effective and meaningful ideas in creating extensive and highly developed exhibition for future generation. The methodology of this research was based on a triangulation method for the purpose the identification of issues from the perspective views of museum scholars and experts toward creating direction in developing museum exhibitions in Malaysia for public learning. The findings revealed that majority of literature review were based on western scholar in knowing the scenario of museum learning within adult visitors. According to the study Museums are recognized as crucial for informal learning, serving diverse visitor demographics,

including families, school children, and adults. The research indicates that adult visitors often engage passively with exhibitions, which varies significantly from practices observed in more museum-centric cultures, like those in Europe. The research also highlighted that there is a growing interest in incorporating technology into exhibitions to enhance visitor interaction and learning experiences. Museums contribute significantly to public knowledge of history, culture, and the natural environment, aligning with educational goals and tourism development in Malaysia. The research underscores the potential for museums in Malaysia to evolve into dynamic educational institutions through strategic exhibition development that caters to the diverse needs of visitors. It calls for a more robust approach to integrating technology and addressing the cultural perceptions surrounding museum visits to enhance learning experiences

Ahmad et al. (2015) conducted a study on “The role of museums in providing educational experiences and the importance of engaging visitors as active participants”. The study focused on how adults visitors describe learning through adapting visitors’ as participants in engaging exhibits and what benefits their learning experience and informal learning outcomes. The methodology of this research was based on a triangulation method that offers an amalgamation of qualitative and quantitative strategies provides multiple perspectives and the most in-depth understanding of the experience in an exhibition. Qualitative methods on their own are often deliberated anecdotal, and not credible, valid and reliable. The research used qualitative methods, which refer the literature review in the purpose the identification of issues from the perspective views of museum scholars and experts towards creating direction in developing museum exhibitions in Malaysia for public learning. The findings revealed that majority of literature review is based on western scholar in knowing the scenario of museum learning within adult visitors. It would be required to the further enhance the robustness of this research.

Sonne et al. (2023) analyzed “The development of the continuing education for museum staff in Scandinavia”. The evaluation programme consisted of an electronic survey distributed to the course participants before and after the course, as well as observations during the course, discussions with the participants during the course and a concluding evaluation based on the Generic Learning Outcomes (GLO) evaluation tool. The research group seek to answer the question related to what

possibilities that are generated for heritage institutions. Finally, the group answers the question of how adult education and learning related to heritage institutions might develop. The results of the evaluation showed some interesting results. The GLO-evaluation showed that the participants enjoyed the test course, and that the test course affected their behavior and progression. An area scoring lower, was the GLO-area knowledge and understanding, leading us to conclude that this part of the course could be developed further when the course is adjusted. The course developers also need to pay attention to the GLO-areas of attitudes and values; and the GLO-area skills when the course is adjusted.

Zunic et al., (2023) conducted a study on “Museum development in Bosnia and Herzegovina as an indicator of the positive socio-cultural impact of tourism”. The study provided a comparative review of the country's tourism and museum development, showcasing the multiple benefits of tourism and museums. The identification of museums and museum resources revealed that, during the past three decades, approximately thirty museums of a predominantly thematic character have been established, particularly in the country's most visited destination (Sarajevo). Furthermore, an open-air museum (ethno-village) trend has begun. The findings revealed that museum visitation is increasing in tandem with tourist trips to the country, despite a lack of adequate monitoring (incomplete figures that are inconsistent with the situation in the field). Even though the global crisis disrupted tourism and museum development (COVID-19), both areas are key drivers of economic revitalization, as evidenced by new ideas and projects in this field. The study also highlighted that museums are considered as one of the most important socio-cultural benefits of tourism because they preserve and present heritage, improve science, education, and cultural profiling, encourage employment and visitation, provide a better stay, generate income, and contribute to environmental urbanization and higher living standards.

Kurbatova et al. (2023) conducted a study on “Evolution and Development of Museum Buildings”. The study examined the phenomenon of spectacular buildings, focusing on museums that fascinate with their architectural solutions and interior design. The study focused on emergence of the first museums as institutions that store and display artifacts of historical significance. The study investigated the interior, lighting and colors and its effects on visitors. The findings revealed that attention on

is paid to the establishment of the art of museum exposition in recent years as an independent and valuable genre of creativity. The aspects allow museums to remain relevant and engaging for audiences. They fulfill an important mission of preserving cultural heritage and provide an opportunity to enjoy art and history in a unique way. Museums continue to amaze us with their beauty and intellectual richness, revealing to us the greatness and diversity of the world.

Abiodun, (2024) conducted a study on “The role of cultural heritage museums in community development”. The study aimed to assess the process of community development, cultural heritage museums play a dynamic role as they sit at the nexus of the past and present in Africa. The findings revealed that organizations play a vital role in promoting community development by safeguarding and promoting cultural heritage is examined in this study. The researchers examined how museums contribute to education, tourism, identity formation, and social cohesion by using an interdisciplinary lens to examine their effects on local communities. The findings revealed that cultural heritage museums can act as stimulants for economic revival by fostering sustainable tourism and producing cultural capital. The findings of the study revealed that cultural Heritage Museums thus play a major role in the development on community as in, impacting on education in providing learning means to schools and local communities on their cultural identity and its power, in socio-economy as secondarily improving economic growth through tourism, creation of roads and business for locals and promoting cultural identities in the society.

Anganna (2024) conducted a study on “Development of Museum as Tourism Attraction Based on Virtual Digital in Ubud Bali”. This research aimed to unlock the potential of museum tourist attractions using digital virtual technology to stimulate local community engagement and tourist interest. The research employs qualitative analysis through case studies, involving interviews with officials or representatives from four art museums in Ubud. The study reveals that the WT (Weaknesses-Threats) strategy within the SWOT framework is the most effective approach for developing virtualized museum attractions in Ubud. This strategy emphasizes the need to recruit museum staff who understand the concept of virtualized museums and can establish strong connections with museums in the Ubud region. The ultimate product of this strategy would be the creation of an official page on Google Arts and Culture, contributing to the promotion of Ubud's cultural treasures in the digital realm.

Le Blanc et al, (2024) conducted a study on “Museum-Based Sleep Education: Development and Evaluation of Pop-Up Exhibits for Children and Families”. The researchers evaluated their efficacy via observational data and visitor survey responses. For conducting the study, 11 pop-up exhibits in a medium-sized children’s museum from June to December 2023 were exhibited. Each exhibit lasted two hours and was designed to communicate three learning objectives: sleep is good, the sleeping brain is active, and changing nighttime behaviors can improve sleep. The pop-up exhibits included professional signage; take home sleep tips and stickers; videos to display sleep laboratory activities and interesting sleep facts; magnetic “electrodes” and a 3D-printed brain for learning about polysomnography; brain maze coloring sheets, and an inflatable dinosaur fitted to a CPAP mask (REM-ee the dino-snore-us). Each exhibit was staffed by 3-4 trainees (undergraduate to post-doctoral level) and observational data were collected by museum staff. Post-visit survey data in adults assessed participant demographics, meeting of learning outcomes, interest in recommending the exhibit to a friend, prioritization of sleep (0 to 100 scale), and changes in one’s perception of what a scientist looks like. Results 1,336 people visited the sleep exhibits (32% of total museum visitors). Adult visitors (18+) were invited to complete a post- visit survey (N=102; M=37.25 years; 63.7% female; 37.25% non-white). Survey responses indicated that most learning objectives were met (89.2%), that most visitors would recommend the exhibit to a friend (91.2%), that visitors’ prioritization of sleep changed from 67.9% before the exhibit to 87.5% after the exhibit ($p<.001$), and that many visitors intended to change their sleep habits (73.5%). More than half of visitors (62.2%) reported that their perception of a scientist had changed (e.g., demographically diverse, friendlier). The study concluded that pop-up museum exhibits are a feasible and effective method for communicating sleep information in local communities. Additional work is needed to determine whether permanent installations of sleep exhibits retain their efficacy when sleep experts are not actively staffing the exhibit.

Краснов, (2024) conducted a study on “The activities of modern school museums along the path of deep digitalization and the methodical development of personalized educational environment”. Three conceptual trajectories of museum space development in modern school were proposed namely development of special school spaces for museum and library activities in the framework of personalization of educational activity, development of the museum potential as a center for joint

extracurricular activities not only for school children but also for city residents; filling the museum with artifacts that meet the criteria of museum value and providing the necessary digital information; and creating a digital museum as the first stage of formation of the future museum-exhibition space with perspective of filling the museum with real exhibits. The conclusion of the study was that it is necessary to digitize the activities of the school museum, which allows to expand the activities of the museum as a center of communicative, educational and research activities.

Trofimova and Kazakova, (2024) conducted research on “Prerequisites and Trends in the Development of Virtual Museums in the XXI Century”. The researchers examined the trends that contribute to the implementation of virtual technologies in the activities and concepts of museums. It emphasized the reform of human intelligence (according to A. Koyre) and the emergence of a virtual escapist as a new type of modern consumer. The study analyzed the new functions that have appeared in modern museums under the influence of new information technologies. On the example of The Pushkin State Museum of Fine Arts, we consider the possibilities of using and implementing projects in the museum by means of virtual technologies. A systematize of the latest tasks for museum development set by ICOM Russia was conducted. The study concluded that application of the latest digital and information technologies today will help fully realize the main function of museums — the right to cultural development of people. The present findings will aid in creating new forms of preserving the cultural heritage of mankind, as well as to avoid its loss.

Abiodun, (2024) conducted a study on “The Role of Cultural Heritage Museums in Community Development”. The study examined contribution of museums to education, tourism, identity formation, and social cohesion by using an interdisciplinary lens to examine their effects on local communities. The research design for the present research was empirical in nature. The researcher also examined the impact of cultural heritage museums as a stimulant for economic revival by fostering sustainable tourism and producing cultural capital. The research also assessed the function of museums as centers of education, encouraging historical consciousness and promoting lifelong learning. The findings revealed that true-life practical stories of communities to better gives an understanding of the work topic. The findings have proven that Cultural Heritage Museums play a major role in the development on community as in, impacting on education in providing learning

means to schools and local communities on their cultural identity and its power, in socio-economy as secondarily improving economic growth through tourism, creation of roads and business for locals and promoting cultural identities in the society.

2.2.2 Researches Conducted in India

Gupta, (1965) conducted a study on “Cooking utensils used by Gujarati and Punjabi families”. A schedule to be administered to the housewives was used as the instrument for collecting data. It was pretested to determine its suitability with 10 families Living in Baroda, five of whom belonged to Gujarati community and five to the Punjabi community. The sample was selected from the two cities, Delhi and Baroda. Fifty families were selected, 25 for each community. Some areas in each city were selected, where the ratios of the Punjabi (Delhi) and the Gujarati (Baroda) families were considered to be high. From each area, five families were selected, irrespective of their income group. As far as possible random sampling technique was used. The findings indicated that the range of years of experience was similar in the two communities. There were more Gujarati housewives having more years’ experience, and more Punjabi housewives in class with fewest years. The findings also indicated that brass was preferred for most of the utensils. Dominant reasons given were; even heating, multi-uses, less risk of burning the food and durability. The most frequently used utensils in both communities were: broad neck degchi, kadhai and tawa. utensils of different sizes were used with much variation of dimensions and thickness of utensils within each general size. Among all the metals used for these utensils, brass was found to be used most commonly by the two communities n, then came the stainless steel and iron. Tin and aluminium were used by very few families in the two groups and copper was not used at all.

Salunke, (1969) conducted a study on “Survey of Utensils, Appliances & Related Supplies in the Kitchens of some Selected University Staff Quarters of M.S.U.Baroda” to find out the commonly used cooking utensils, tools, appliances and related supplies in the kitchens of some selected university staff quarters of the Maharaja Sayajirao University of Baroda. To develop a list of the minimum requirements of kitchen utensils, tools, appliances and serving equipment for which the families need functional storage space. Present study was concerned with the inventory of kitchen utensils, tools, appliances and related supplies in the kitchens of some selected university staff quarters. Due to the wide variety of utensils,

appliances, tools and supplies and the limited space available, it is necessary to plan adequate storage space for these various items in the kitchen. The investigator of this study particularly dealt with information about the types of fuels which were used for cooking purpose, frequency of use of different cleaning agents for cleaning of utensils and dishes, types and number of kitchen utensils, their frequency of use and their dimensions. The major findings of the present study were: case of frequency of use, most of the families used four to thirteen number of tapelies frequently. They were using pressure cooker frequently for cooking food.

Singh, (1969) conducted a study on “Performance Characteristics of Heating Appliances & Utensils In Terms of Heat Distribution & Thermal Efficiency” to find out the heat distribution pattern of utensils made of different materials and different shapes of the bottom with different heating appliances and thermal efficiency of different type of heating appliances using the utensils of different materials and shapes. In the present study, factorial design of analysis of variance was used to find out the main effects due to metal and shape of the bottom of the utensil with each of the heating appliances. The appliances selected for the present study were Racold electric stove, Bajaj hot plate, original pressure stove, Premier pressure stove, Efar circular wick stove, Nirbhaya circular wick stove, Prakash multi-wick stove, and Umrao multi-wick stove. According to a preliminary survey in Baroda, it was found that most preferred utensils by homemakers are aluminium, brass and stainless steel. Both the round and the flat-bottomed utensils having the same dimensions were selected for the experiments. The major findings of the study were there was considerable difference in the area of brownness when the three metals of aluminium, brass and stainless steel were used. In all the cases except in case of Panchal gas burner, aluminium utensil had the maximum area of brownness and stainless steel the least area of brownness. The type of metal used has no significant effect on the thermal efficiency of kerosene stoves and gas burners.

Bintee, (1978) conducted a study on “A Study of Kitchen-Sink Heights” to make a survey of the kitchen-sinks to determine the prevailing dimensions of the sinks and heights of the sink-centre. To devise an instrument or method to measure the angle of body bend of the workers and find the comfortable heights of sinks. For the experiment, five different sink heights were selected on the basis of the variation found in the sink heights as a result of a preliminary survey of kitchen sinks. One sink was located for the experiment having a height of 77.5 cm from the floor. A

few attachments to manipulate the five different sink heights from one sink were fabricated: which were to be fitted on the original sink to get different sink heights. Also, an instrument was designed and developed to measure the angle of body band of the workers on the basis of the findings of this study it can be noted that in deciding the height of any work surface, there are many factors which must be considered in the light of their total effect. Also, it shows that the most important factor is the height of the worker, because the dimensions of the body parts are mostly in proportion to the height. Thus, the findings conclude that the height of the sink installed in the Home Management House on which the experiment was conducted, is very low and not suitable for the students who wash dishes in the house.

Kaul, (1980) conducted a study on “Ergonomic assessment of household utensils handle”. The present study was formulated to find out the basic design criteria for handles of selected household utensils like fry pans, pressure cooker and sauce pans. Three types of utensils were undertaken for the experimental study, like four brands of pressure cookers, three brands of sauce pans and three brands of frying pans. The major findings of the study revealed that there was a large variation in the dimensions of utensils handles, irrespective of the dimensions of the pan. Also, utensils handles are designed with no due consideration to the human dimensions and capabilities. Among all the experimental utensils, the handle length varied in each case. The four brands of pressure cooker had volume 4½ to 6 liters and handle length ranged between 15.2cms. to 17.5cms. For the saucepans and frying pans the handle length was 14.5cms. to 23cms. whereas, 18cms. length for the handle was found convenient by the respondents. The area of the handle also varied in each case. In some sauce pans the area has been utilized in giving more than the needed length, which could be utilized for increasing the diameter of the handle, to have a good grip. Subjects preferred 2.7cms. 2.4cms. diameter for the handle of the sauce pan and frying pan.

Saxena, (1980) conducted a study on “A Study of Consumer Experiences Towards Electric Iron and Blender in Terms of their Utility” to find out the different brands and types of iron and blender possessed by the families and the extent of each of these appliances and ascertain the important factors which were considered while selecting these appliances. Families reported that Murphy non-automatic irons took

a long time (17 minutes) to get heated, whereas others did not report it. Eighteen percent families shock from the cord and metal body of different irons. Forty eight percent families got their iron repaired due to burning of the heating element, burnt cord and damaged insulation etc. The findings of the study revealed that During construction, manufacturers could give more importance to those factors which were mostly taken into account by consumers while purchasing. In some cases, appliances do not conform to the specified requirements, so efforts could be channelized towards meeting the specifications. And There is a need to make families aware of the proper way to use the appliances.

Ranjan, (1982) undertook a study on “A Study of Use of Solar Cooker by the Beneficiaries of the Subsidized Solar Cooker Scheme, Baroda” to identify specific background characteristics of the respondents – homemakers of the beneficiary families of the subsidized solar cooker scheme by GEDA. To study the extent of satisfaction of the homemakers who received the solar cooker under the subsidized scheme in relation to design, efficiency, ease of handling, and acceptability of the food prepared in the solar cooker. To develop an instrument to measure the attitude of the homemaker towards solar cooker as a device for domestic use. The findings of the study revealed that the data were analyzed on a general basis to get an overall picture and on the basis of income and education wherever it was thought appropriate. It was found that majority of the homemakers had medium education and one-third of time had high education. The age of the respondent’s ranged from 20 years to 67 years. Almost half the respondents belonged to the young group and nearly the same proportion belonged to middle age group. Majority of the respondent’s had small families. About 69.00 percent of homemakers hailed from families with middle income group. The highest average score was observed for homemakers with medium education whereas in the case of high scorers the 10-rest mean score was obtained for homemakers with medium education.

Talati, (1999) conducted research on “Practices and Satisfaction of Homemakers towards Purchase of Microwave Ovens”. The objectives of the study were to find out the Selection Factors considered for the purchase of ovens, frequency and nature of use of Microwave Oven, extent of satisfaction regarding the features of selected recipes in the oven and to conduct the Experiments for Testing the timings of recipes of the oven. The present research study is descriptive as well as experimental in nature. Through non-probability sampling procedure, forty- five homemakers each

who possessed Microwave Oven were chosen deliberately from Alkapuri and Karelibaug areas of Baroda city, thus totaling the sampling size as ninety. The data was collected by personal interviewing the respondents on a pre-tested interview schedule by the investigator herself. The experiments were conducted to test the timings of Selected Recipes against the Recommended timings given by the Manufacturers. The major Findings of the Study revealed that a higher percentage of the respondents were found to be in the age group of 41-50 years, having their monthly income between Rs. 30,001 to Rs. 40,000. Majority of them were graduates and belonged to nuclear families. Nearly two-third of respondents were employed. The dominant factors for the selection of Microwave Oven were "Need of the Family", "Time Saving", "Size of the Family", "Easy to Operate", the "Reputation of the Manufacturer". Majority of the respondents using Microwave Oven daily. All of them were using it for Reheating and Cooking.

Singhal, (2002) conducted a study on to investigate the “Extent of buying decision process followed by the homemakers with respect to electric water purifiers and the bacteriological quality of water obtained from these purifiers”. The study had descriptive cum experimental research design. Purposive and convenience sampling methods were used for the selection of sample. A sample of 35 homemakers of each brand was selected from the list based on the convenience to the investigator. The findings revealed that most of the respondents were of age group 36-50 years and were graduates. Majority of the respondents had their family income ranging between Rs. 15001 Rs.25000, belonged to the nuclear family and had 4-6 members in the family. Most of the respondents were using their purifiers since ≥ 1 to < 2 year. The study concluded that the buyers did not face many problems related to their purifiers and the purifiers were found to be efficient in reducing the bacteria as per the results of the bacteriological testing of water.

Chandrasekaran, 2017 conducted a study on “Origin and Development of Museums in India”. The research was qualitative in nature. The findings revealed that The Museums have been the forbearers of the thinking of their respective periods. Etymologically, the term `museum' is derived from the Greek word 'museion' which means temple of the Muses the goddesses protecting arts and sciences. The museion or `musaion' which was founded by Ptolemaies I (who died in 283 B.C.) in Alexandria was a centre for learning and scholarship in the world of

ancient Greece and an important establishment of Hellenic civilization, housing rich collection. It was temple of the muses, occupying a large building in the royal quarter of the town, functioning as a centre of research and education. Hence the primary purpose of the museum was religious. It was not so much connected with the objects of material culture. As daughters of Zeus and Mnemosyne, the muses represented collective memory to their own elementary heritage. The objects of the material culture were not deemed to be connected with memory at that time and hence they were not so much collected.

Conclusion

The related review revealed that various studies were conducted on Museum abroad focusing on its importance, development, impact on society, while review studies in India related to ergonomic assessment of utensils, purchase pattern for buying ovens, buying decisions of water purifiers, satisfaction of homemakers regarding flour mill, use of solar cooker and its beneficiaries, study on assessment of kitchen sinks, thermal conductivity of utensils. But there was a dearth of research on museum for Household Equipment, its designing and opinion of Stakeholders. Therefore, the researchers opted to conduct a study on “Designing of Household Equipment Museum in the Department of Family and Community Resource Management, Faculty of Family and Community Sciences”.

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, 2014). 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 Definitions

3.3 Variables of the Study

3.4 Locale of the Study

3.5 Unit of Inquiry

3.6 Sample Size and Sampling Procedure

3.7 Selection, Development, and Description of the Tool

3.8 Establishment of Content Validity of Tool

3.9 Phases of Development of Household Equipment Museum

3.10 Data Collection

3.11 Data Analysis

3.1. Research Design

A research design is arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures (Kothari, 2014).

The present study aimed to design and develop the household equipment museum for the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. Thus, an action research project was undertaken to design and develop the provided area according to the needs and preferences of the authorities.

3.2. Operational Definitions:

3.2.1. Household Equipment Museum: For the present study, household equipment museum is referred as a specific space provided by the authorities at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

3.2.2. Professionals: For the present study, professionals were defined as Architects and Interior Designers of Gujarat State established in their respective field with minimum 2 years of experience.

3.3. Variables of the Study

There were two sets of variables under the study.

I. Independent Variables:

For the present study the independent variables were as follows:

A. Personal Variables

- Age (in years)
- Gender
- Educational qualification

B. Situational Variables

- Number of Years of experience
- Number of projects finished

II. Dependent Variable

- A. Opinion of the Professionals regarding the design of the household equipment museum

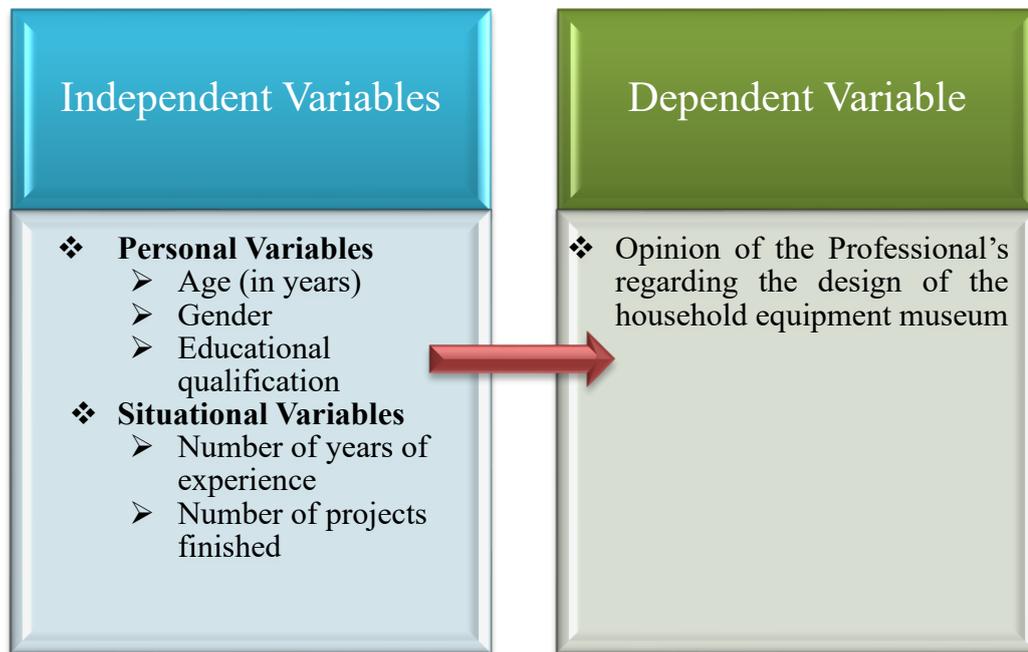


Figure 1: Schematic Diagram showing hypothetical relationship between the variables

3.4. Locale of the study: The locale of the study was “आत्मश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

3.5. Unit of Inquiry: The unit of inquiry were Architects and Interior Designers of Gujarat State established in their respective fields.

3.6. Sampling Size and Sampling Procedure

3.6.1. Sample Size: The total sample size constituted of 120 Architects and Interior Designers established in their respective fields availing from Gujarat State.

3.6.2. Sampling Technique: For the present study, Purposive Sampling Technique was sought to collect the data. The data were collected from 60 Architects and Interior Designers established in their respective fields availing from Gujarat State.

3.6.3. Sample Selection Criteria

3.6.3.1 Inclusion Criteria

- For the present study the Architects and Interior Designers of

Gujarat State were included.

- For the present study the Architects and Interior Designers with minimum 2 years of experience were included.

3.7. Selection, Development and Description of the tool

The researcher identified and prepared a feasible tool to facilitate successful data collection for the present research based on a comprehensive review of the literature. The data was collected by the researcher on their convenient time and day.

3.7.1. Selection of the tool

In light of the objectives framed for the study, an observation sheet and questionnaire were prepared to collect the needed information regarding the appropriateness of selected aesthetic and functional attributes of Household Equipment Museum in the Department of Family and Community Resource Management.

3.7.2. Description of the tools

For the present study Observation sheet and Questionnaire was used to gather the data on the requirements for the household equipment museum in the Department of Family and Community Resource Management.

Observation Sheet:

The observation sheet was developed in compliance with the objectives of the study. The Observation sheet was developed to record the existing features of the Hospitality Management Laboratory, Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat in order to note the changes required for designing Household Equipment Museum.

Questionnaire

The questionnaire was developed to find out the opinion of the professionals, regarding designed Household Equipment Museum in existing parameters namely design, aesthetics, functionality, space utilization, quality, durability, proportion, convenience of use, and aesthetic value of the designed functional and aesthetical elements.

Section I: Background information of the professionals.

This section was comprised of information regarding personal, and situational variables of the respondents covering details of the Age (in years), gender, educational qualification, Monthly personal income (in ₹), and situational variables covering number years of experience, and number of projects finished.

Section II: Opinion scale

Opinion of the Professionals regarding Household Equipment Museum on various aspects namely design, aesthetics, functionality, space utilization, quality, durability, proportion, the convenience of use, and aesthetic value of the designed functional and aesthetical elements. It comprised of summated rating scale of agree, undecided and disagree.

3.7.3. Development of the tool

Based on the information collected through review of related literature by the researcher, a questionnaire was developed. Due consideration was given to include all questions that had elicit the information needed to attain the objectives to the study.

3.8. Establishment of Content Validity of Tool

In order to evaluate content validity, the Questionnaire that had been created was administered to a panel of 11 experts consisting of judges specializing in the field of Interior Design, as well as teachers affiliated with the Department of Family and Community Resource Management within the Faculty of Family and Community Sciences at The Maharaja Sayajirao University of Baroda, located in Vadodara, Gujarat.

3.9. Phases of Development of Household Equipment Museum

Phase I: Assessing the requirements for the household equipment museum in the Department of Family and Community Resource Management. The researcher acquired the measurements of the area i.e. space assigned for Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management,

Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. As the area was not developed and it was not being utilized up to its full capacity the researcher wanted to implement the idea of research in the Laboratory. The researcher acquired necessary information from the In-charge Head of the Department.

Phase II: Identification of client's Need and Preferences: The needs and preferences of the client's viz; the authorities of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda was identified. For the same, an observation sheet was constructed to measure the area with regards to the various aspects to be incorporated in the Design of Museum.

Phase III: Design Development: On the basis of the needs and preferences of the authorities and on the basis of information collected regarding the physical structure and the existing status of various components of the area to be developed as a museum. The design was developed with the aid of various visual projections of AutoCAD software and drafted the design in AutoCAD 2021 software and later got the 2D drawings approved. The researcher also created 3D model of the whole design on SketchUp Pro 2021 and made an animated video using the Enscape software.

The researcher then did market survey to obtain cost estimation of the design implementation which was determined by considering factors such as the cost of material used and labor expenses for the design implementation.

Phase IV: Opinion of the Interior Designers and Architects: Based on the developed design, feedback from the professionals were taken through questionnaire.

3.10. Data Collection

The data was collected via questionnaire by the researcher. The questionnaire was distributed among the professionals to gather information on the opinion regarding the extent of expediency of the design of Household Equipment Museum.

3.11. Data Analysis

Collected data was analyzed through relational and Descriptive Statistics

3.11.1 Categorization

The following categories were made to enable researcher to analyze the data for further statistical application.

I. Age of respondents: The obtained range of the age of the respondents at the time of data collection on the basis of equal intervals were as follows:

- 1) 24-28 years
- 2) 29-33 years
- 3) 34-38 years

II. Gender of the Respondents: It referred to the gender of the respondents and was categorized as below:

- 1) Male
- 2) Female

III. Educational qualification of the respondents: The education obtained by the respondents at the time of data collection were categorized as:

- 1) Diploma
- 2) Graduate
- 3) Post-graduate

IV. Occupation of the respondents: The occupation of the respondents was categorized as follows:

- 1) Architect
- 2) Interior Designer

V. Years of Experience: The years of working experience of the respondents at the time of data collection were categorized as follows:

- 1) 2-6 years
- 2) 7-10 years
- 3) 11-15 years

VI. Number of Projects completed: The number of projects completed by the respondents at the time of data collection were categorized as follows:

- 1) 4-10
- 2) 11-18
- 3) 19-25

VII.Types of Projects Completed: The types of projects completed by the respondents at the time of data collection were categorized as follows:

- 1) Commercial
- 2) Residential
- 3) Both

3.11.2. Coding

Scores were given to each response, then the information from each section of questionnaire was transferred on the excel sheet.

3.11.3. Tabulation

The data was transferred from coding sheet into tabular form to give a clear picture of findings. The data of the present research was tabulated to arrive at tables that are required for describing the data.

3.11.4. Statistical Analysis

The descriptive statistical analysis was done through frequency, percentage distribution and weighted mean and relational statistics was done through t-test and ANOVA.

Table 1: Relational statistics applied to test the hypotheses

Test	Independent and Dependent variables
<p>(ANOVA) F-test</p>	<p>Independent variables: Age in years, Educational qualification, Years of Experience, Number of Projects undertaken by the professionals with Dependent variable: Opinion of the respondents regarding designed Household Equipment Museum</p>
<p>t-test</p>	<p>Independent variables: Gender, and Occupation With Dependent variable: Opinion of the respondents regarding designed Household Equipment Museum</p>

FINDINGS AND DISCUSSION



CHAPTER IV

FINDINGS AND DISCUSSION

An attempt was made to propose and implement design for the existing space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. This chapter dealt with presenting, interpreting, and discussing the findings obtained by the analysis of the data collected through questionnaire. The results were presented in the following sub-sections:

Section I – Design and Development of Household Equipment Museum

4.1. Phase I: Assessment of the existing space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

4.2. Phase II: Designing of the space of Household Equipment Museum.

4.3. Phase III: Development 3D walkthrough of designed Household Equipment Museum.

4.4. Phase IV: Cost estimation of the designed Household Equipment Museum.

4.5. Phase V: Development of the designed Household Equipment Museum.

Section II- Opinion of the Interior Designers and Architects for the developed Household Equipment Museum of The Department of Family and Community Resource Management, The Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

4.6. Background Information of the respondents.

4.7. Opinion the respondents on the developed Household Equipment Museum.

Section III- Testing of Hypothesis

Section IV- Display of the designed and developed Household Equipment Museum for public.

Section I

Design and Development of Household Equipment Museum

4.1 Phase I: Assessment of the existing space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

For the present study, the researcher was assigned a space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. Recognizing the untapped potential of this area, the researcher designed to implement the research idea within the space. Prior to initiating any work, necessary permissions were obtained from the In-Charge Head of the Department. Subsequently, the researcher meticulously measured the entire area and translated these measurements into detailed drafts using AutoCAD2021 software. The researcher also created 3D walkthrough of the whole design on SketchUp Pro 2021.

While measuring the allotted area it was found that the total built up area of the household equipment museum was 230 Sq feet, length 16'.6", width 13' and height 11'.1". The length of the lobby area was 14'.10", width 7'.11" and 11'.1". The walls of the museum were whitewashed in off-white colour. The texture of the wall was smooth. The flooring of the household equipment museum was having ceramic tiles. It was also observed that there was no false ceiling and the ceiling had normal slab with 15mm plaster with off-white color. There was one door and two windows in the museum with 4 tube lights and 2 fans for lighting and ventilation in the room.



Plate 1: Wall A of the area before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 2: Wall B of the area before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 3: Wall C of the area before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 4: Wall D of the area before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 5: Wall E Foyer area of before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 6: Wall F Foyer area of before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre

4.2. Phase II: Designing of the space of Household Equipment Museum.

The researcher designed the Household Equipment Museum in alignment with the needs, preferences and budget of the Department of Family and Community Resource Management. Using CAD software, 2D drawings were developed. The designs were reviewed and approved with guidance from the guide and the In-charge Head of the Department.

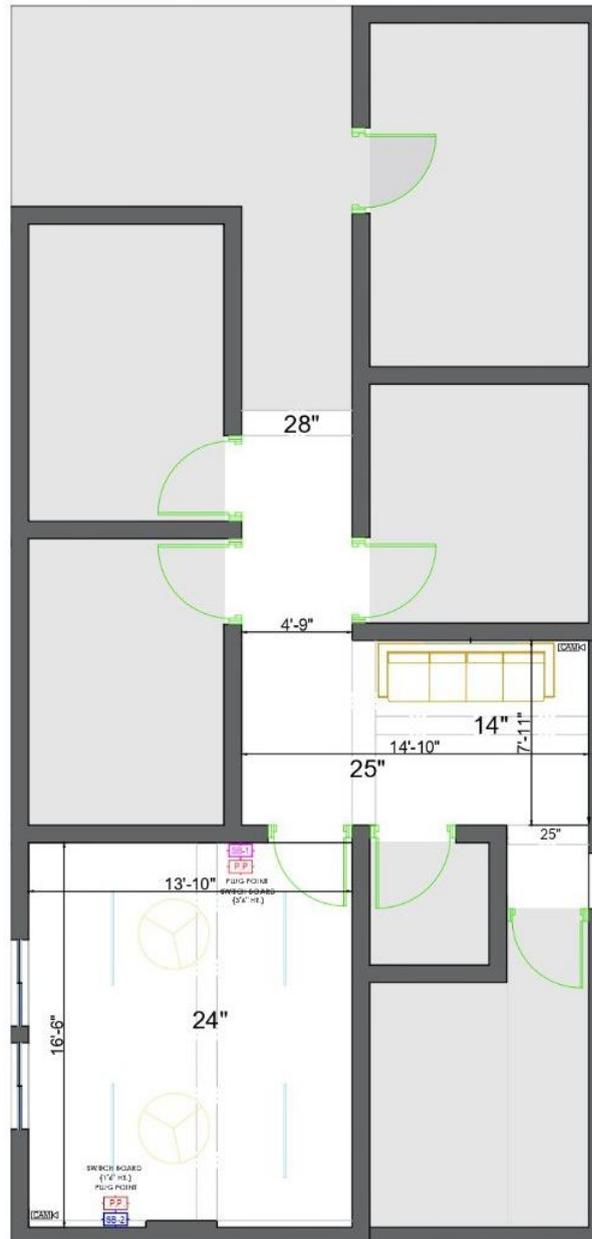


Plate 7: Layout of the space before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre

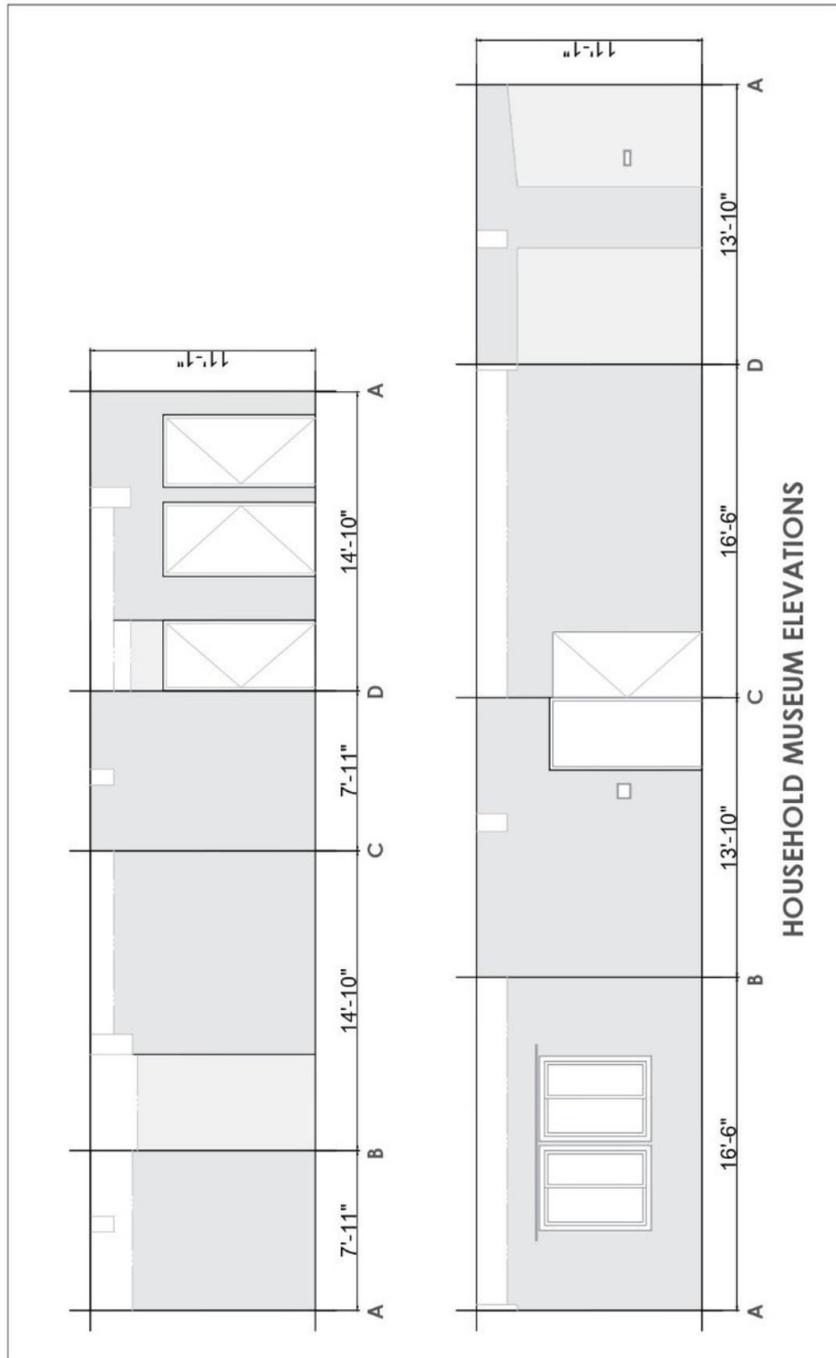


Plate 8: Elevation of the space before Development of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre

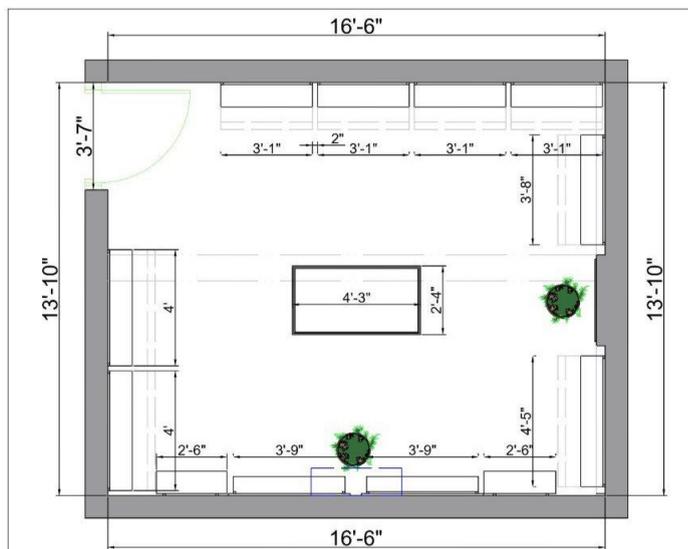


Plate 9: Layout of Museum's Shelves at "आत्माश्रित" Vocational Skill Development Centre

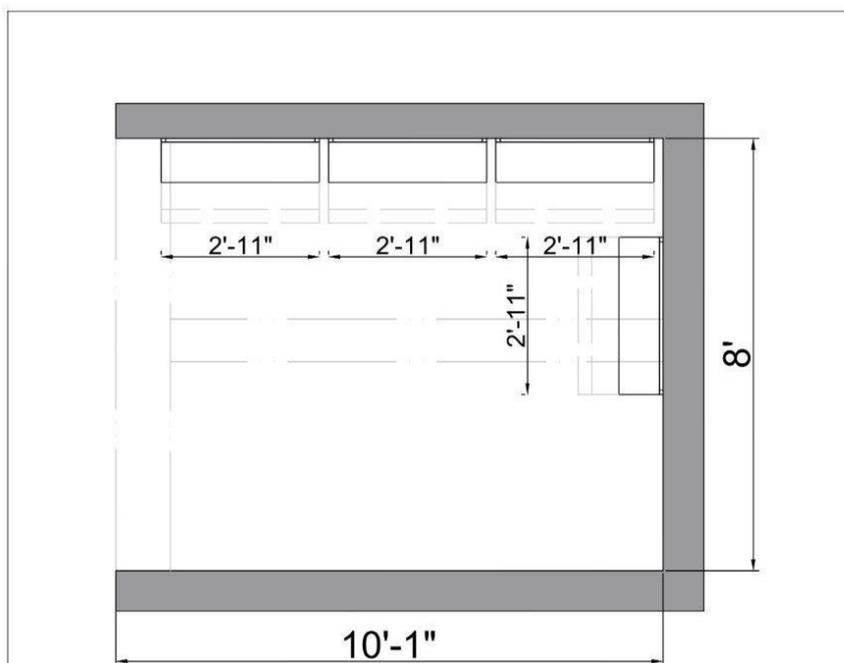


Plate 10: Layout of Foyer's Shelves at "आत्माश्रित" Vocational Skill Development Centre

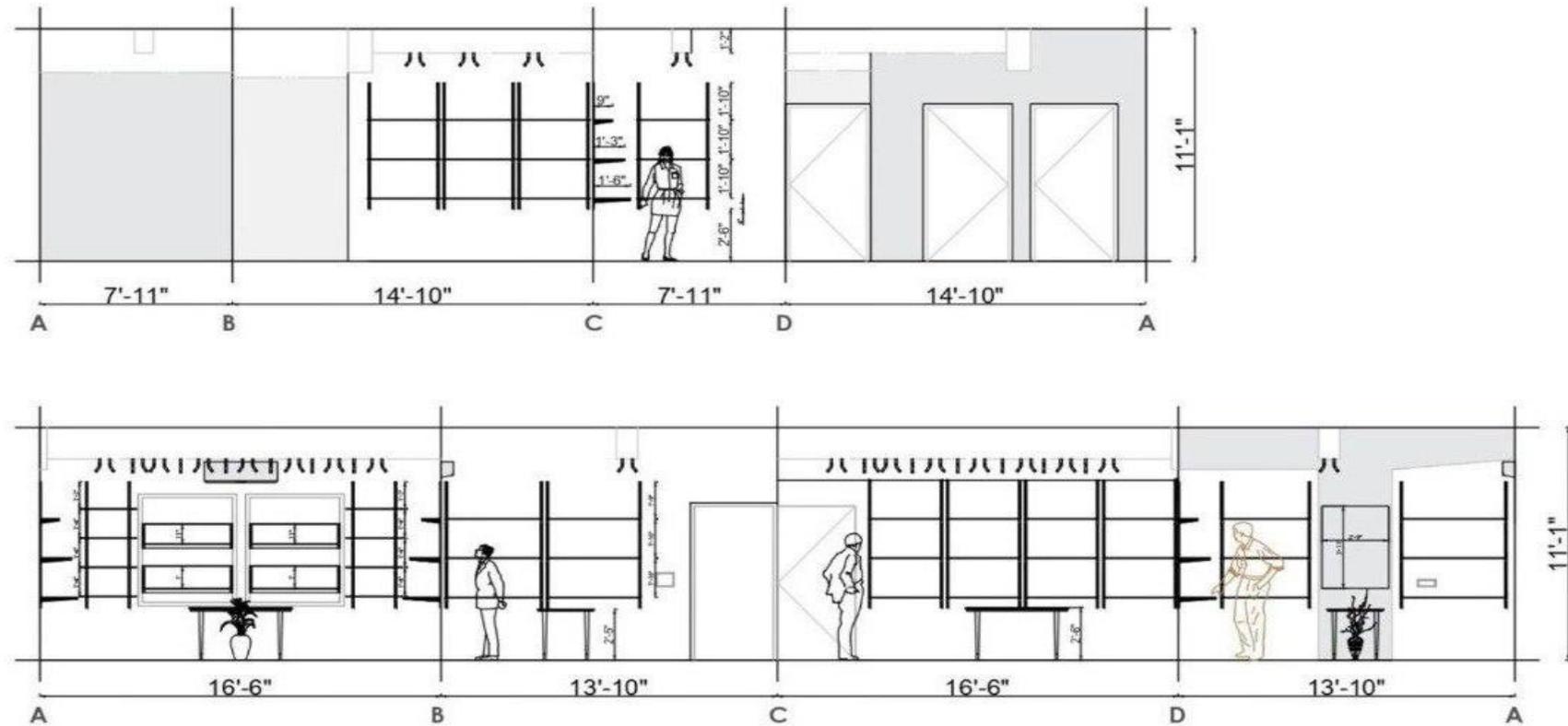


Plate 11: Working Elevations of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre

4.3. Phase III: Development 3D walkthrough of designed Household Equipment Museum.

The researcher developed a 3D walkthrough of the Household Equipment Museum using SketchUp and Enscape software, showcasing the complete design of the museum located within the Department of Family and Community Resource Management at the Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. This interactive walkthrough enhances visitor engagement by enabling 24/7 access and global accessibility. It also offered detailed insights into the museum's exhibits and layout. Additionally, the walkthrough serves as a powerful tool for attracting visitors through virtual previews and helps preserve the museum's design digitally.

QR Code for the 3D Walkthrough



YouTube Link for the 3D Walkthrough

<https://youtu.be/Z-v7jQPG9t8?si=mQt79ysBy0Z3M9VC>

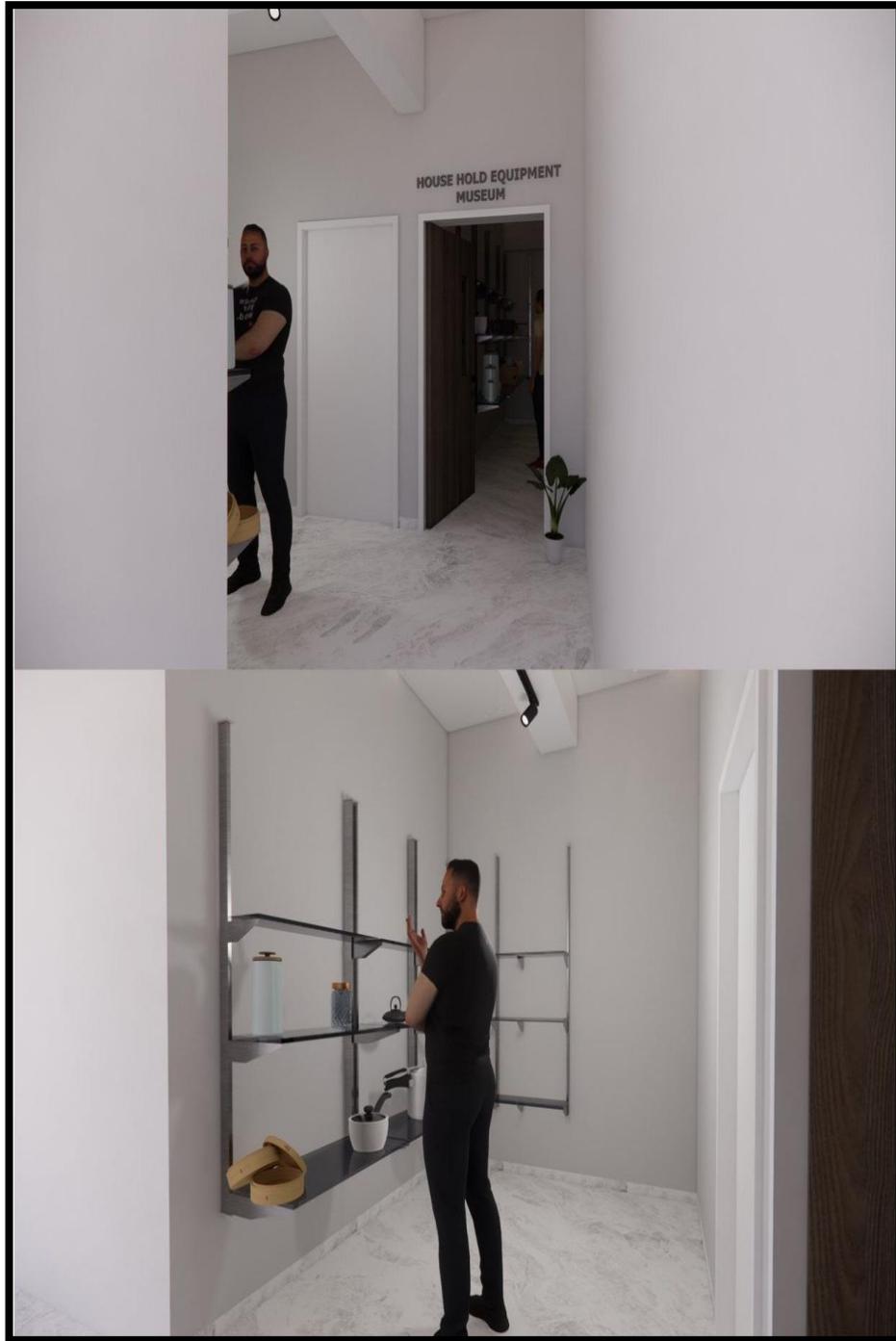


Plate 12: 3D drawing of designed foyer area of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre



Plate 13: 3D drawing of designed Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre

4.4. Phase IV: Cost estimation of the designed Household Equipment Museum

The fourth phase of the development of Household Equipment Museum was Cost estimation where the researcher went to the market and found out the cost of each material which he was going to use in developing Household Equipment Museum which included colour, electrical work, concealing the existing windows, installation of Air Conditioner, Focus Lighting, Wall panels, door repainting and door lock. The total cost of implementing the design was **1,75,888 Rs.**

Table 2: Detailed Cost Estimation of the Development of Household Equipment Museum

Sr. No.	Name	Description	Dimensions	Quantity	Rate per piece	Amount
1	Track light	20 W magnetic track light black body		26	550	15619
2	Track	Magnetic track	1M	11 M	119 M	1319
3	Electrical	Labour and material				5500
4	Table	Teak wood	51''*28''*30'' ,,			9500
5	Stone for table	White Marble	50''*27''	1	1800	1800
6	Polish	Wooden door polish	7'* 3'			2000
7	Lock	Brass door lock		1	3150	3150
8	Polish	Natural table polish				1000
9	Paint	Asian Royal				18000
10	Window sealing	8mm Ply		2	1750	3500
11	Information board	PVC Vinyl sheet	33''*47''	1	800	800
12	Bracket	Iron black coated	6''	16	40	640
			9''	40	50	2000
			15''	24	75	1800
			18''	24	90	2160
13	Channel	Iron black coated	6'	30	210	6300
14	Tags	Brown cartridge sheet & jute thread				1200
15	Ceramic Pot	Terracotta	2'	2	800	1600
16	Air Conditioner	2 Ton Godrej		1	47000	47000
17	Labour for AC fitting	AC fitting with copper pipe				5000
18	Shelves	12mm toughened glass				42000
19	Labour for fitting	Channel and bracket fitting				4000
					Total	175888

4.5. Phase V: Development of the designed Household Equipment Museum.

The fifth and last phase of designed Household Equipment Museum was implementation of the proposed design. Following approval, the researcher implemented the designs, beginning with repainting the room and foyer area. To enhance aesthetics, light fixtures, fans, and windows were concealed. It also involved electrical work, including the installation of focus lights and an AC plug. As part of the development of the Household Equipment Museum, the door was repainted, and the door lock was replaced to give ancient look.

For display enhancements, wall brackets and aluminium channels were painted black and carefully installed in designated areas. The brackets were arranged in varying sizes to accommodate and showcase a diverse range of equipment. A marble slab was placed on a wooden table to further elevate the museum's visual appeal. After setting up the museum, the researcher curated the utensils and equipment, ensuring an organized display. Labels were created, with the guidance of the advisor, to facilitate visitor navigation.

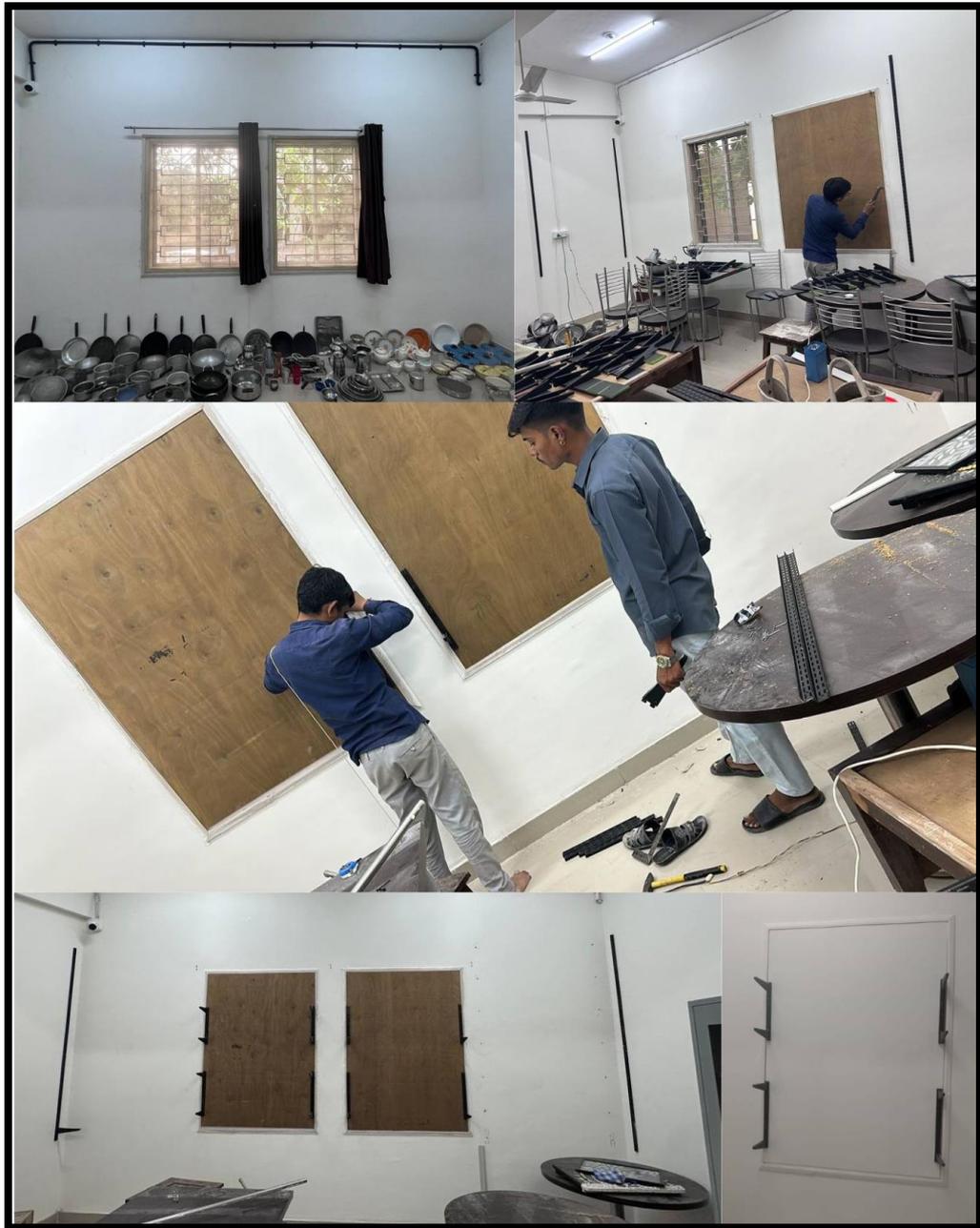


Plate 14: Sealing of window for placement of the channels and shelves in the Household Equipment Museum



Plate 15: Painting of walls prior the development of Household Equipment Museum



Plate 16: Door painting and changing of door lock prior the development of Household Equipment Museum



Plate 17: Door polishing prior the development of Household Equipment Museum



Plate 18: Marble cutting for display of utensils in Household Equipment Museum



Plate 19: Placement of marble for display of utensils in Household Equipment Museum



Plate 20: Painting of channels and rods for Household Equipment Museum



Plate 21: Painted of channels and brackets for Household Equipment Museum

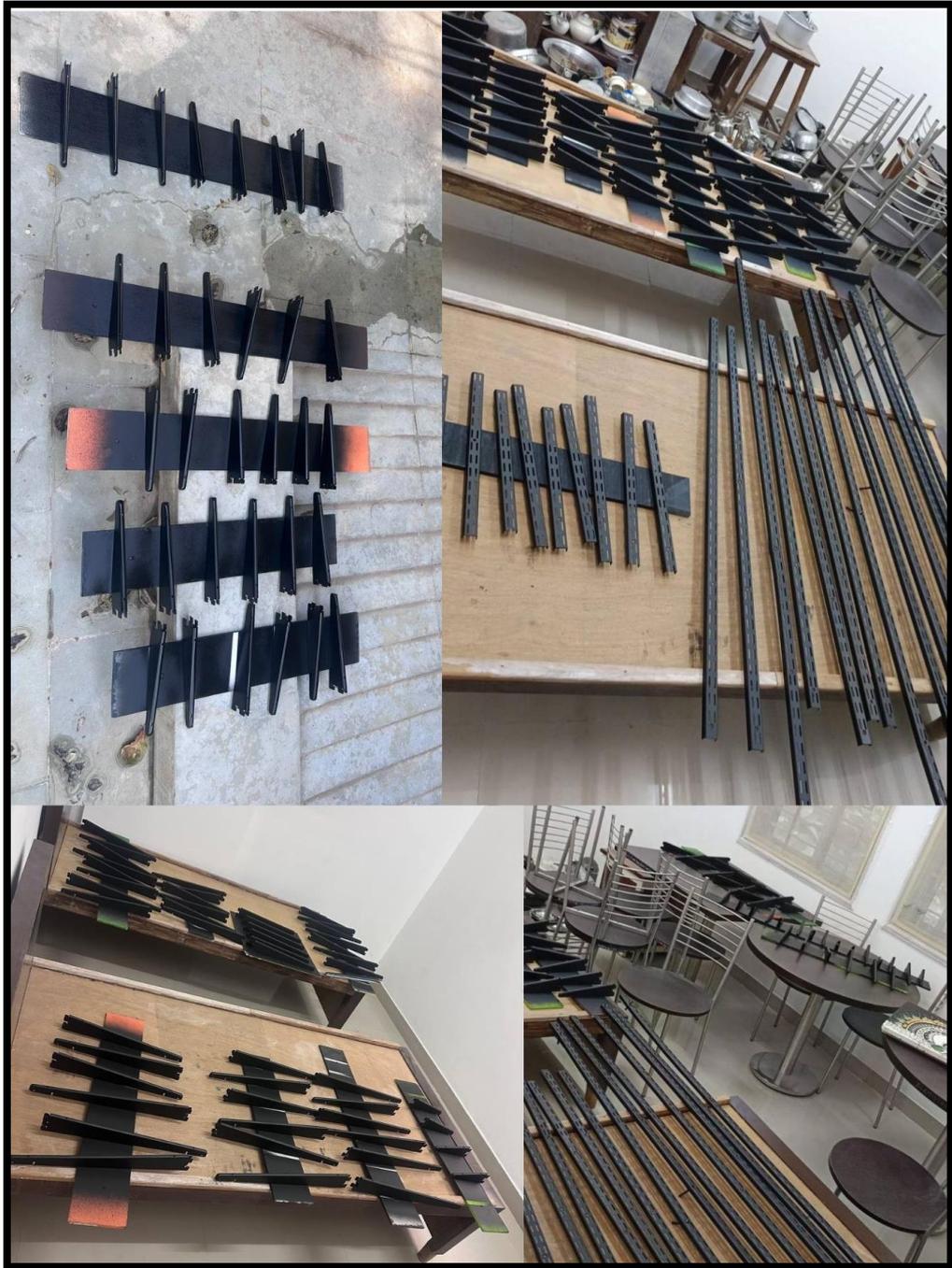


Plate 22: Painted of channels and brackets for Household Equipment Museum



Plate 23: Fixing of channels for Household Equipment Museum



Plate 24: Fixing of Channels and brackets on walls of Household Equipment Museum



Plate 25: Fixing of brackets on walls of Household Equipment Museum

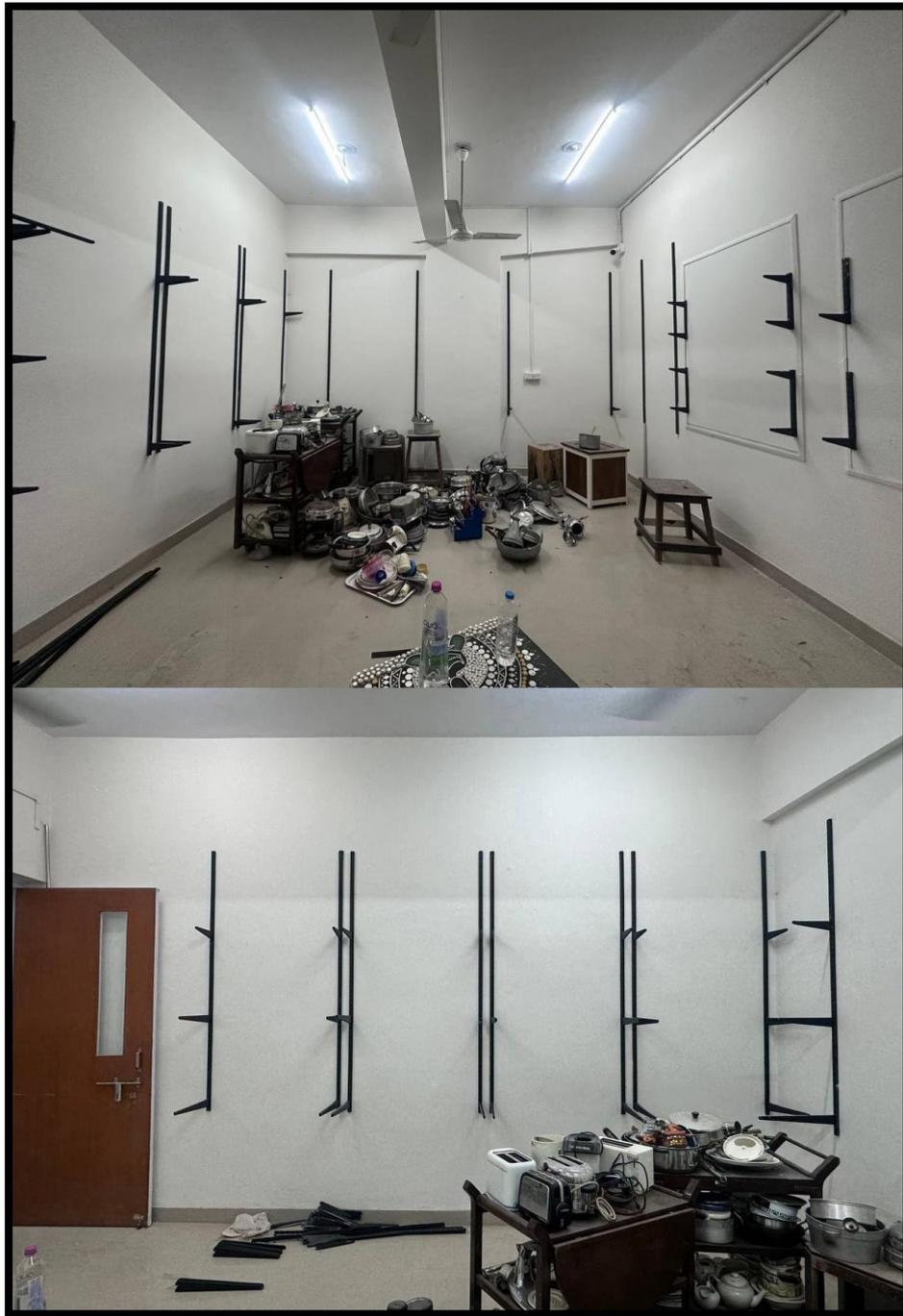


Plate 26: Fixing of brackets on walls of Household Equipment Museum



Plate 27: Placement of glasses on the channels of Household Equipment Museum



Plate 28: Placement of glasses on the channels of Household Equipment Museum

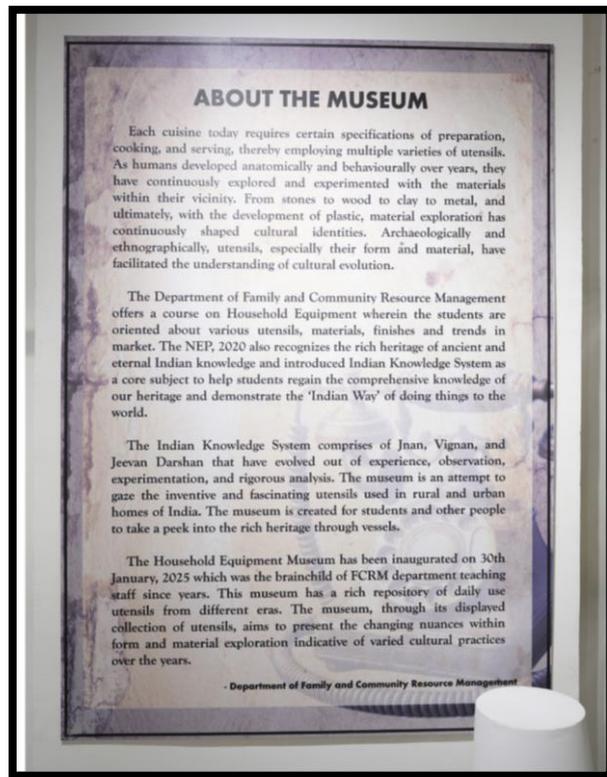


Plate 29: Information about the Household Equipment Museum



Plate 30: Purchasing of Pots and fitting of Air Conditioner in Household Equipment Museum



Plate 31: Preparation of Tags and Signages for the visitors in the Household Equipment Museum



Plate 32: Development of Foyer Area in the Household Equipment Museum



Plate 33: Placement of Utensils in the Household Equipment Museum



Plate 34: Placement of Utensils in the Household Equipment Museum



Plate 35: Placement of Utensils in the Household Equipment Museum

Section II

Opinion of the Interior Designers and Architects for the developed Household Equipment Museum of The Department of Family and Community Resource Management, The Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

4.6. Background Information of the respondents.

This section contained background information of the respondents regarding age (in years), gender, educational qualification and occupation. This section also covered work-related information wherein years of experience, number of projects completed and type of projects finished are included.

The respondents were categorized in the age group from 24-38 years. The data in table 3 (Fig: 2) revealed that 49.17 per cent of the respondents were aged between 24-28 years followed by 35.83 per cent who were aged between 29-33 years of age. The mean age of the respondents was 31.03 years. The data regarding the gender of the respondents revealed that 58.33 per cent of the respondents were males followed by 41.67 per cent of females. On scrutiny of the educational qualification, it was revealed that 62.50 per cent of the respondents were graduates followed by 19.17 per cent of the respondents had pursued Diploma. It was also reported that 18.33 per cent of the respondents pursued Post Graduation. The data regarding occupation revealed that 75 per cent of the respondents were Interior Designers followed by 25 per cent of the respondents were Architects.

Table 3: Frequency and Percentage Distribution of the respondents according to their Personal Information

Sr. No.	Personal Information of the Respondents	Respondents (n= 120)	
		f	%
1.	Age (in years)		
	24-28 years	59	49.17
	29-33 years	43	35.83
	34-38 years	18	15.00
	Mean	31.03	
	Standard Deviation	3.62	
2.	Gender		
	Male	70	58.33
	Female	50	41.67
3.	Educational Qualification		
	Diploma	23	19.17
	Graduate	75	62.50
	Post Graduate	22	18.33
4.	Occupation		
	Architect	30	25.00
	Interior Designer	90	75.00

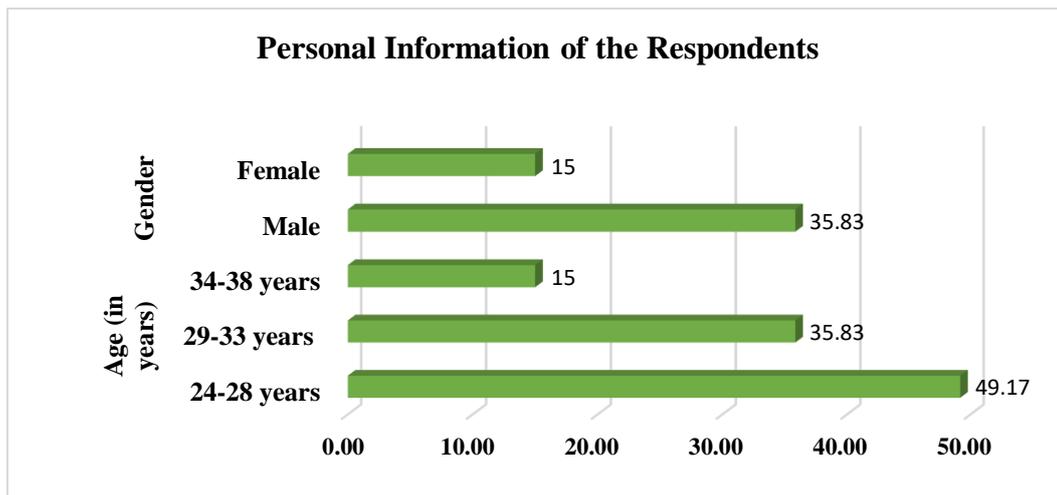


Figure 2: Percentage Distribution of respondents according to their Personal Information

Work-related Information: The data regarding work related information revealed that 45.83 per cent of the respondents had 2-6 years of experience as Interior Designers and Architects respectively followed by 27.50 per cent of the respondents had 7-10 years of experience in their field. The data also revealed that 26.67 per cent of respondents had experience of 11-15 years in their respective field. On scrutinizing

the number of projects completed revealed that 66.67 per cent of the respondents had completed 4-10 projects followed by 19.17 per cent of the respondents who had completed 11-18 number of projects. The data on type of project completed revealed that 41.67 per cent of the respondents had completed Commercial projects followed by 31.67 per cent of the respondents had completed Residential projects and 26.67 per cent of the respondents had completed residential and commercial projects (Table 4, Fig: 3).

Table 4: Frequency and Percentage Distribution of the respondents according to their Work-related information

Sr. No.	Personal Information of the Respondents	Respondents (n= 120)	
		f	%
1.	Years of Experience		
	2-6 years	55	45.83
	7-10 years	33	27.50
	11-15 years	32	26.67
	Mean	7.55	
2.	Number of Projects Completed		
	4-10	80	66.67
	11-18	23	19.17
	19-25	17	14.17
	Mean	10.10	
3.	Type of Projects Completed		
	Commercial	50	41.67
	Residential	38	31.67
	Both	32	26.67

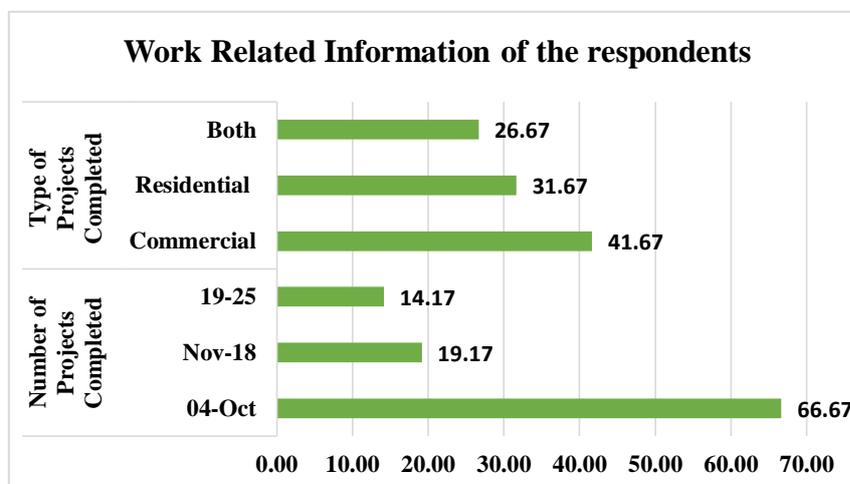


Figure 3: Percentage Distribution of respondents according to their work-related Information of the Respondents

4.7. Opinion the respondents on the developed Household Equipment Museum

This section dealt with the information on Opinion of the Interior Designers and Architects regarding the designed Household Equipment Museum on aspects such as wall, lighting, flooring, ceiling, storage shelves, display, space planning and layout and tags, signages and overall design of the designed museum deign.

The data on opinion regarding wall aspect of designed Household Equipment Museum revealed 90 percent of the respondents agreed that “wall mounted displays and shelves are essential for maximizing exhibit space” followed by 83.33 per cent of the respondents agreed on “the color of the wall makes a visitor feel relaxed”. On further scrutiny, the data revealed that 76.67 per cent of the respondents agreed that “the color of the wall made the room appear spacious” (Table 5, Fig: 4)

Table 5: Frequency and Percentage Distribution of respondents according to their opinion regarding wall aspect of designed Household Equipment Museum

Sr. No.	Statements related to wall aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Wall-mounted displays and shelves are essential for maximizing exhibit space.	108	90.00	12	10.00	--		2.90
2.	By incorporating glass on walls provide a sense of openness.	80	66.67	40	33.33	--		2.67
3.	Colour of the wall depicts a sense of safety and quietness	86	71.67	28	23.33	06	7.20	2.67
4.	Colour of the wall make a visitor feel relaxed	100	83.33	18	15.00	02	2.40	2.82
5.	Colour of the wall is appropriate	88	73.33	22	18.33	10	12.00	2.65
6.	Colour of the wall highlights the displayed utensils	86	71.67	26	21.67	08	9.60	2.65
7.	Neutral color scheme of the museum creates an engaging atmosphere.	84	70.00	30	25.00	06	7.20	2.65
8.	Colour of the museum make the room appear spacious	92	76.67	16	13.33	12	14.40	2.67
Overall weighted mean score								2.71

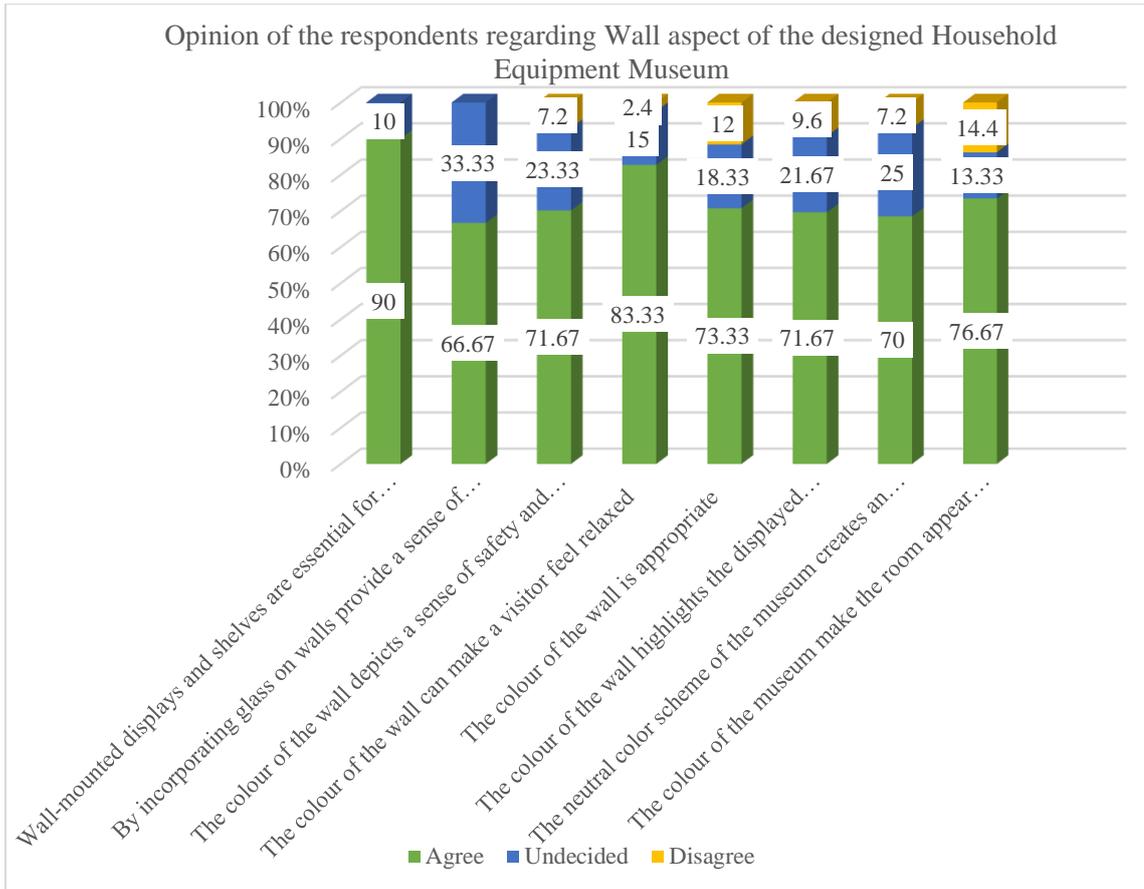


Figure 4: Percentage Distribution of respondents according to their opinion regarding wall aspect of designed Household Equipment Museum

The data of opinion regarding lighting aspect of designed Household Equipment Museum revealed that 93.33 per cent of the respondents agreed that “The lighting provided in the museum makes the room appear spacious” followed by 76.67 per cent of the respondents agreed on “Spotlighting was used effectively to draw attention to important and feature exhibits”. 75.00 per cent of the respondents agreed that “the colour of the lighting selected for the museum allows clarity of eye movement” and 73.33 per cent of the agreed respondents that “the room looks royal by using appropriate lighting” and “Ambient lighting contributes positively to the overall atmosphere of the museum” respectively (Table 6, Fig: 5).

Table 6: Frequency and Percentage Distribution of respondents according to their opinion regarding Lighting aspect of designed Household Equipment Museum

Sr. No.	Statements related to lighting aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Lighting provided in the museum makes the room appear spacious.	112	93.33	08	6.67	--	--	2.93
2.	Lighting provided in the museum highlights the utensils displayed in the museum	82	68.33	32	26.67	06	5.00	2.63
3.	Use of lighting complements the design of the room	84	70.00	26	21.67	10	8.33	2.62
4.	Colour of the lighting selected for the museum allows clarity of eye movement	90	75.00	28	23.33	02	1.67	2.73
5.	Room looks royal by using appropriate lighting	88	73.33	20	16.67	12	10.00	2.63
6.	Ambient lighting contributes positively to the overall atmosphere of the museum.	88	73.33	26	21.67	06	5.00	2.68
7.	Spotlighting is used to effectively draw attention to important and featured exhibits	92	76.67	18	15.00	10	8.33	2.68
Overall weighted mean score								2.70

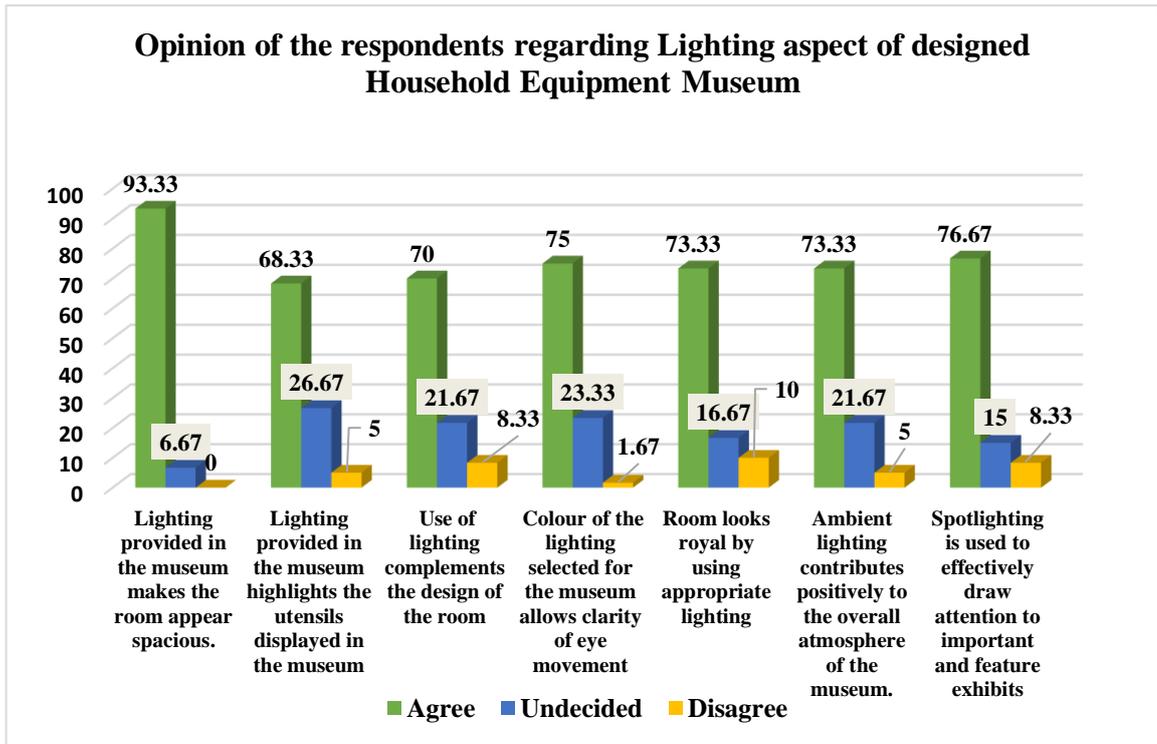


Figure 5: Percentage Distribution of respondents according to their opinion regarding Lighting aspect of designed Household Equipment Museum

The findings on flooring aspect of Household Equipment Museum revealed that 78.33 per cent of the respondents agreed that “the flooring material seems easy to maintain”. A similar percentage of respondents i.e.73.33 per cent agreed on “flooring complements the colour scheme and overall aesthetic of the museum’s interior design” and “material of flooring allows easy movement of heavy equipment” (Table 7, Fig: 6).

Table 7: Frequency and Percentage Distribution of respondents according to their opinion regarding flooring aspect of designed Household Equipment Museum

Sr. No.	Statements related to flooring aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Flooring material is easy to maintain.	94	78.33	12	10.00	14	11.67	2.67
2.	Flooring complements the colour scheme and overall aesthetic of the museum’s interior design.	88	73.33	30	25.00	02	1.67	2.72
3.	Material of flooring allows easy movement of heavy equipment.	88	73.33	26	21.67	06	5.00	2.68
Overall weighted mean score								2.69

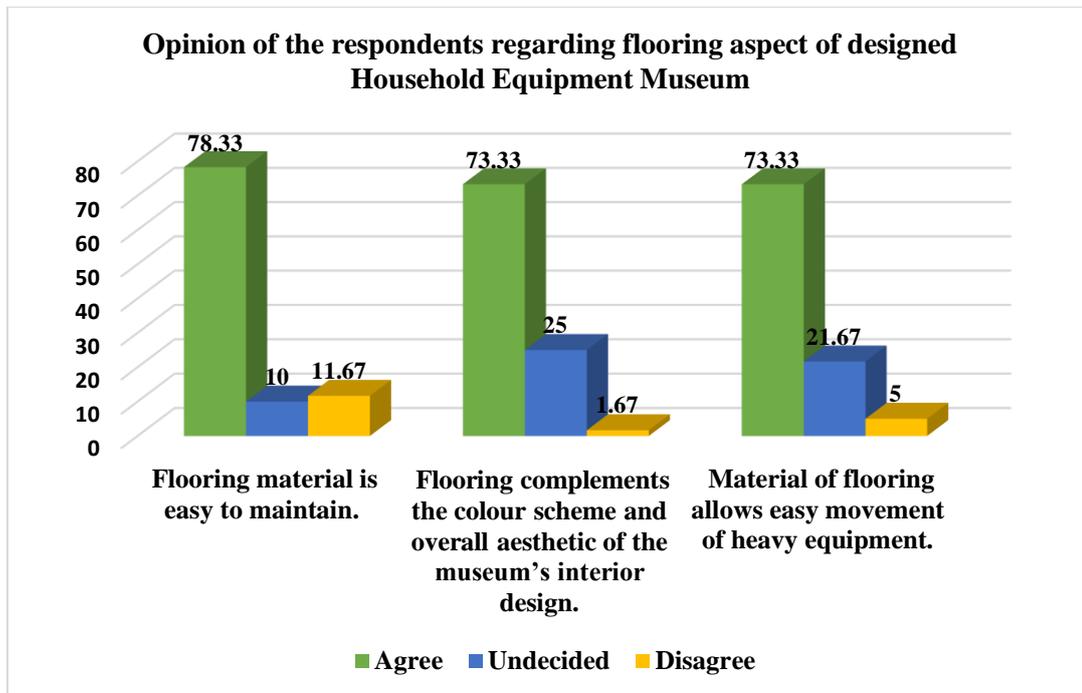


Figure 6: Percentage Distribution of respondents according to their opinion regarding flooring aspect of designed Household Equipment Museum

The data on ceiling aspect in table 8 revealed that 85 per cent agreed that “the ceiling height was high enough to create a sense of grandeur” followed by 81.67 per cent respondents also agreed that “the colour of the ceiling complements with the wall colors to create a cohesive look”. The data also highlighted that 70 per cent of respondents agreed that “the ceiling helped in concealing unsightly infrastructure” followed by 68.33 per cent of respondents who also agreed that “the ceiling helped to create a more polished look” and “ceiling height was high enough to showcase large exhibits” (Fig: 7).

Table 8: Frequency and Percentage Distribution of respondents according to their opinion regarding ceiling aspect of designed Household Equipment Museum

Sr. No.	Statements related to ceiling aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Ceiling height is high enough to create a sense of grandeur.	102	85.00	14	11.67	04	3.33	2.82
2.	Ceiling is high enough to showcase large exhibits.	82	68.33	30	25.00	08	6.67	2.62
3.	Ceiling helped conceal unsightly infrastructure.	84	70.00	30	25.00	06	5.00	2.65
4.	Ceiling helped to create a more polished look.	82	68.33	28	23.33	10	8.33	2.60
5.	Ceiling color complements the wall colors to create a cohesive look.	98	81.67	12	10.00	10	8.33	2.73
Overall weighted mean score								2.68

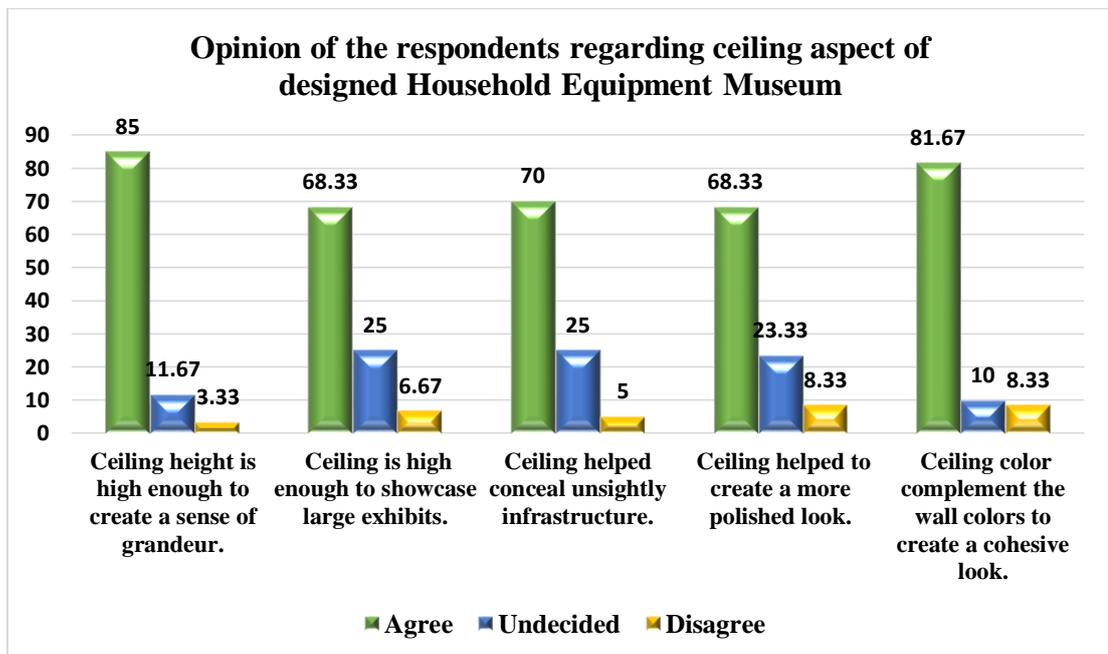


Figure 7: Percentage Distribution of respondents according to their opinion regarding ceiling aspect of designed Household Equipment Museum

The findings on storage shelf aspect for Household Equipment Museum revealed that 81.67 per cent of respondents agreed that “the storage shelf provides enough space to display” and “the storage design is visually appealing”. A similar percentage of respondents i.e. 73.33 per cent agreed that “the storage shelf material is durable and resistant to scratches” and “storage shelf is secure to prevent damage to exhibits” (Table 9, Fig: 8).

Table 9: Frequency and Percentage Distribution of respondents according to their opinion regarding storage shelf aspect of designed Household Equipment Museum

Sr. No.	Statements related to storage shelf aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Storage shelf provides enough space to display	98	81.67	18	15.00	04	3.33	2.78
2.	Storage shelves are well-lit to highlight the exhibits.	82	68.33	34	28.33	04	3.33	2.65
3.	Storage shelf material is durable and resistant to scratches.	88	73.33	18	15.00	14	11.67	2.62
4.	Storage shelf is flexible and adaptable to accommodate different exhibit sizes and shapes.	86	71.67	26	21.67	08	6.67	2.65
5.	Storage shelf is secure to prevent damage to exhibits.	88	73.33	20	16.67	12	10.00	2.63
6.	Storage shelf design is visually appealing.	98	81.67	20	16.67	02	1.67	2.80
Overall weighted mean score								2.69

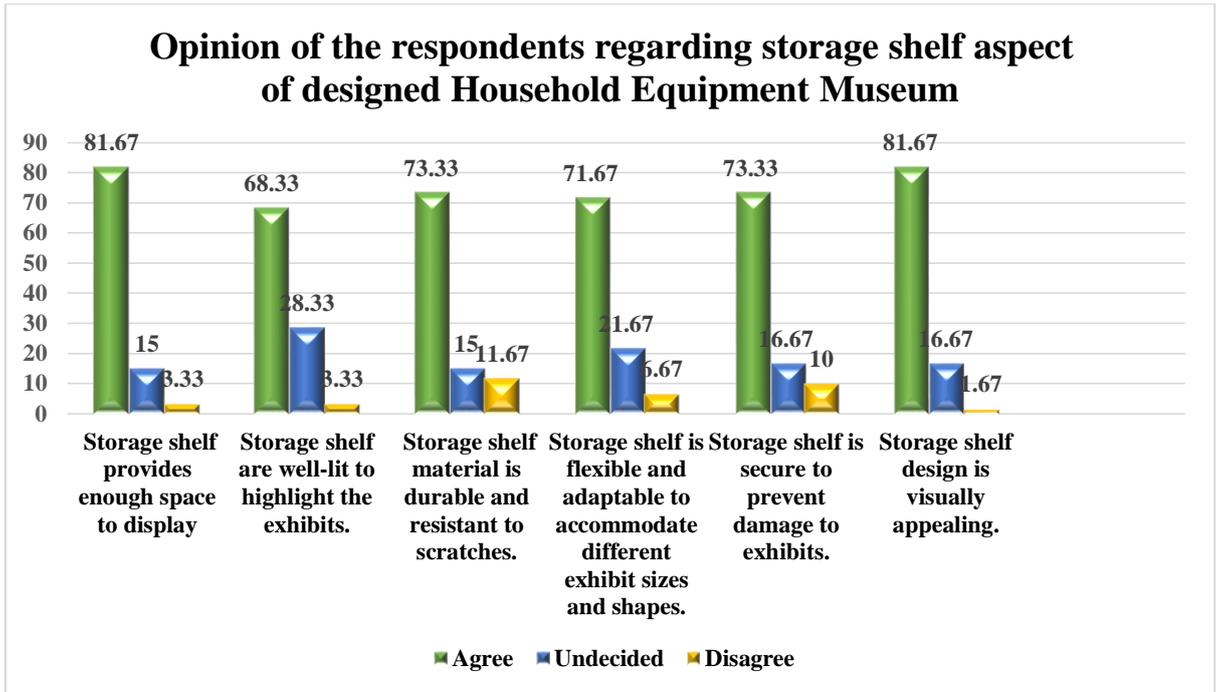


Figure 8: Percentage Distribution of respondents according to their opinion regarding storage shelf aspect of designed Household Equipment Museum

The data on the opinion of respondents regarding display of the equipment for Household Equipment Museum revealed that 81.67 per cent of respondents agreed that “the display of equipment is cohesive”. 78.33per cent of the respondents agreed that “the displayed equipment’s have enough clearance space” (Table 10, Fig: 9).

Table 10: Frequency and Percentage Distribution of respondents according to their opinion regarding Display of the equipment aspect of designed Household Equipment Museum

Sr. No.	Statements related to Display of the equipment	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Display of equipment’s is cohesive.	98	81.67	20	16.67	02	1.67	2.80
2.	Enough space for putting labels for household equipment	82	68.33	30	25.00	08	6.67	2.62
3.	Displayed equipment’s have enough clearance space	94	78.33	18	15.00	08	6.67	2.72
4.	Displayed equipment’s is visible	88	73.33	24	20.00	08	6.67	2.67
5.	Display allows cleaning and maintenance of the equipment displayed in the museum	88	73.33	26	21.67	06	5.00	2.68
Overall weighted mean score								2.70

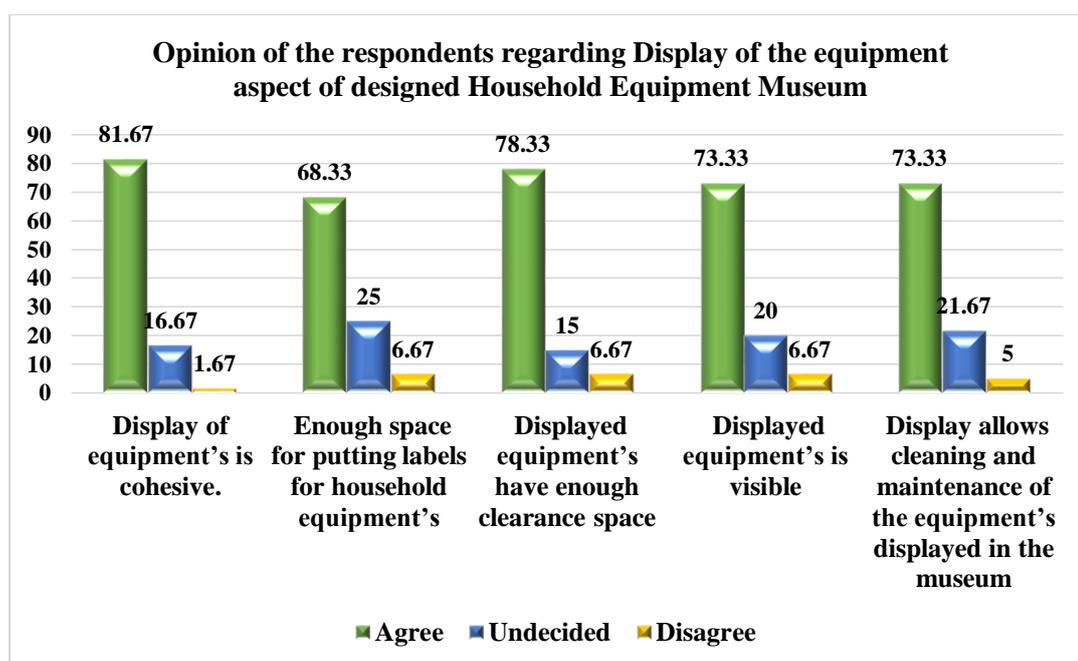


Figure 9: Percentage Distribution of respondents according to their opinion regarding Display of the equipment aspect of designed Household Equipment Museum

The data on the opinion of the respondents regarding space planning and layout aspect for Household Equipment Museum revealed that 81.67 per cent of the respondents agreed that “the interior layout maximized the use of available space for displaying exhibits” followed by 78.33 per cent of respondents agreed that “the layout of the museum provides a logical flow and navigation for visitors” (Table 11, Fig: 10).

Table 11: Frequency and Percentage Distribution of respondents according to their opinion regarding Space Planning and Layout aspect of designed Household Equipment Museum

Sr. No.	Statements related to Space Planning and Layout aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Layout of the museum provides a logical flow and navigation for visitors.	94	78.33	24	20.00	02	1.67	2.77
2.	Spatial arrangement accommodates the various types of exhibits effectively.	82	68.33	28	23.33	10	8.33	2.60
3.	Interior layout maximized the use of available space for displaying exhibits.	98	81.67	16	13.33	06	5.00	2.77
Overall weighted mean score								2.71

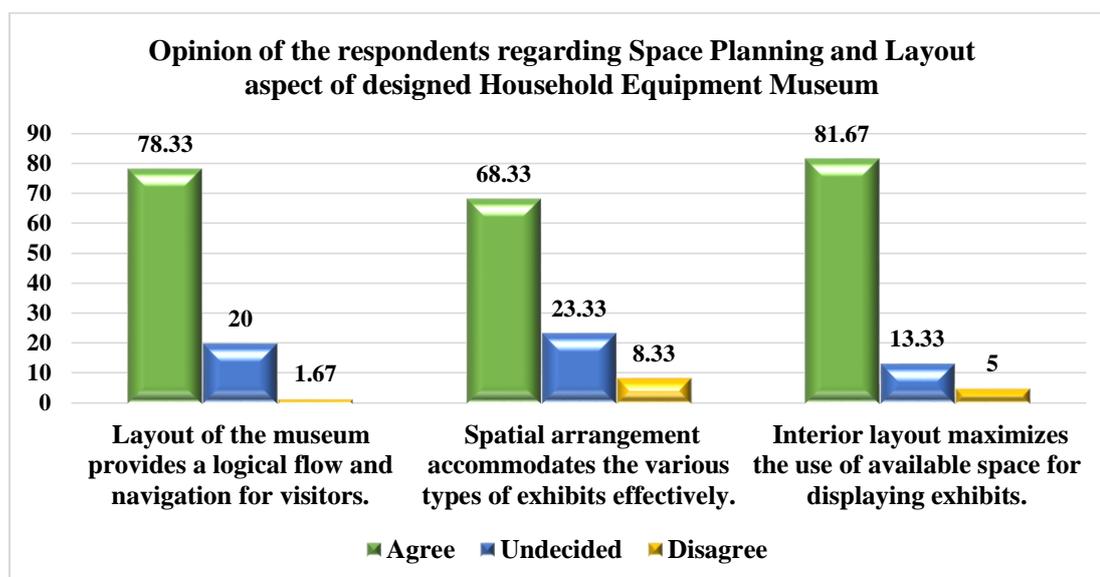


Figure 10: Percentage Distribution of respondents according to their opinion regarding Space Planning and Layout aspect of designed Household Equipment Museum

The data on opinion of respondents regarding tags, signages and way findings aspect revealed that 83.33 per cent of the respondents agreed that “the signages and wayfinding elements are clear to assist visitors in navigating the museum” followed by 73.33 per cent of respondents agreed that “signages provided useful information”. The data also revealed that 68.33 per cent of the respondents agreed that “the design of wayfinding elements complements the overall interior aesthetic” followed by 61.67 per cent of the respondents agreed that “the signages and exhibit information add value to the visitor experience” (Table 12, Fig: 11).

Table 12: Frequency and Percentage Distribution of respondents according to their opinion regarding Tags, Signages and Way findings aspect of designed Household Equipment Museum

Sr. No.	Statements related to Tags, Signages aspect	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Signage and wayfinding elements are clear to assist visitors in navigating the museum	100	83.33	16	13.33	04	3.33	2.63
2.	Signage and exhibit information adds value to the visitor experience.	74	61.67	42	35.00	04	3.33	2.65
3.	Design of way finding elements complements the overall interior aesthetic.	82	68.33	28	23.33	10	8.33	2.65
4.	Signage provided useful information	88	73.33	28	23.33	04	3.33	2.65
Overall weighted mean score								2.67

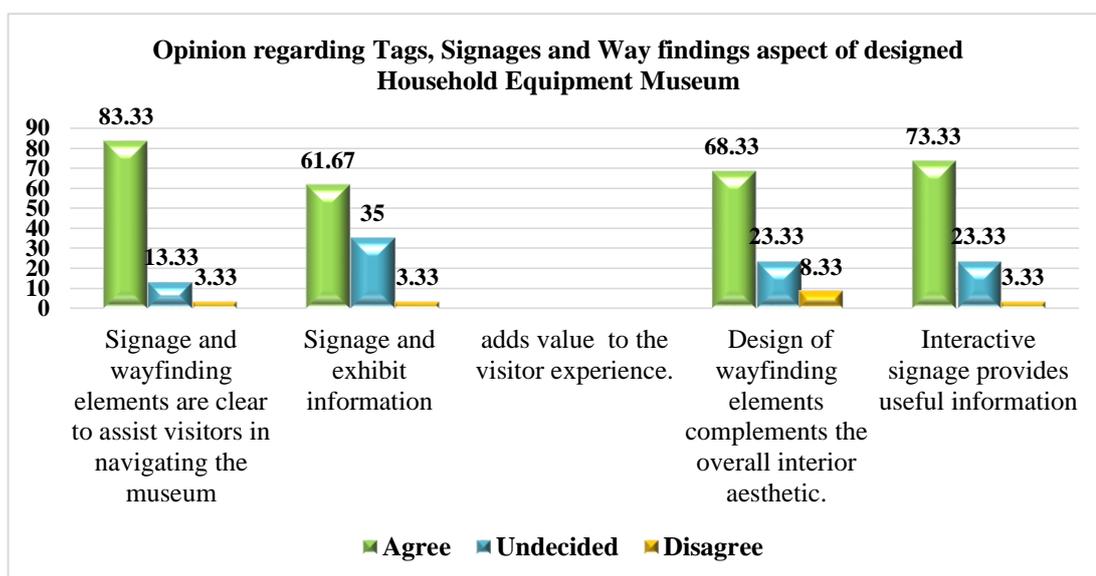


Figure 11: Percentage Distribution of respondents according to their opinion regarding Tags, Signages and Way findings aspect of designed Household Equipment Museum

The table 13 on overall design of the museum revealed that 76.67 per cent of the respondents opined that “the design of the museum successfully communicated the historical and cultural importance of household equipment” followed by 73.33 per cent of respondents agreed that “the design of the museum has allowed physical interactivity”. The data also revealed that 70 per cent of the respondents “the found overall design of museum is sustainable” (Fig: 12).

Table 13: Frequency and Percentage Distribution of respondents according to their opinion regarding Overall Design of the Museum aspect of designed Household Equipment Museum

Sr. No.	Statements related to Overall Design of the Museum	Respondents (n= 120)						Weighted Mean Score (3-1)
		Agree		Undecided		Disagree		
		f	%	f	%	f	%	
1.	Overall design was sustainable	84	70.00	28	23.33	08	6.67	2.63
2.	Overall aesthetic of the museum designed is cohesive	80	66.67	38	31.67	02	1.67	2.65
3.	Design of the museum has allowed physical interactivity	88	73.33	22	18.33	10	8.33	2.65
4.	Design of the museum creates curiosity among the visitors	82	68.33	34	28.33	04	3.33	2.65
5.	Museum design successfully communicated the historical and cultural importance of household equipment.	92	76.67	26	21.67	02	1.67	2.75
Overall weighted mean score								2.67

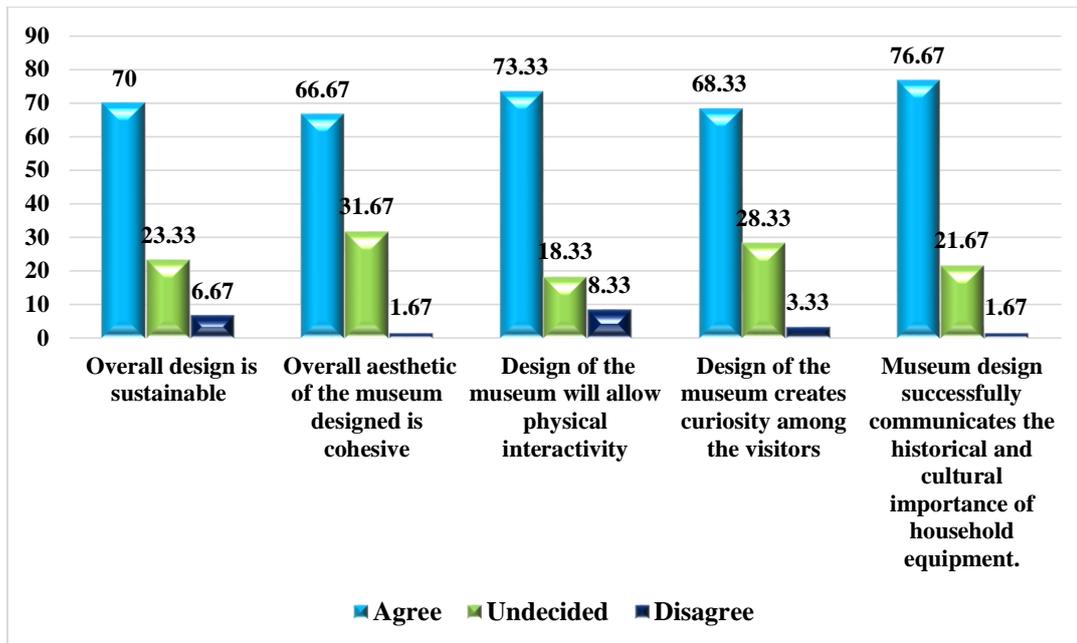


Figure 12: Percentage Distribution of respondents according to their opinion regarding Overall Design of the Museum aspect of designed Household Equipment Museum

Overall weighted mean score of Opinion of the respondents regarding design of the Museum of designed Household Equipment Museum

The overall weighted mean score of Opinion of the respondents regarding design of the Museum of designed Household Equipment Museum revealed that wall aspect, display of the equipment and space planning and layout aspect was ranked first i.e. 2.71. The flooring aspect and storage shelf aspect of the overall design of the designed design for the Household Equipment Museum was ranked second i.e. 2.69 (Table 14, Fig: 13).

Table 14: Overall Weighted Mean Score of the opinion of the respondents regarding designed Household Equipment Museum

Sr. No.	Aspects	Respondents (n=120)
		Weighted Mean Score
1	Wall aspect	2.71
2	Lighting aspect	2.70
3	Flooring aspect	2.69
4	Ceiling aspect	2.68
5	Storage shelf aspect	2.69
6	Display of the equipment	2.71
7	Space Planning and Layout aspect	2.71
8	Tags, Signages and Way findings aspect	2.67
9	Overall Design of the Museum	2.67

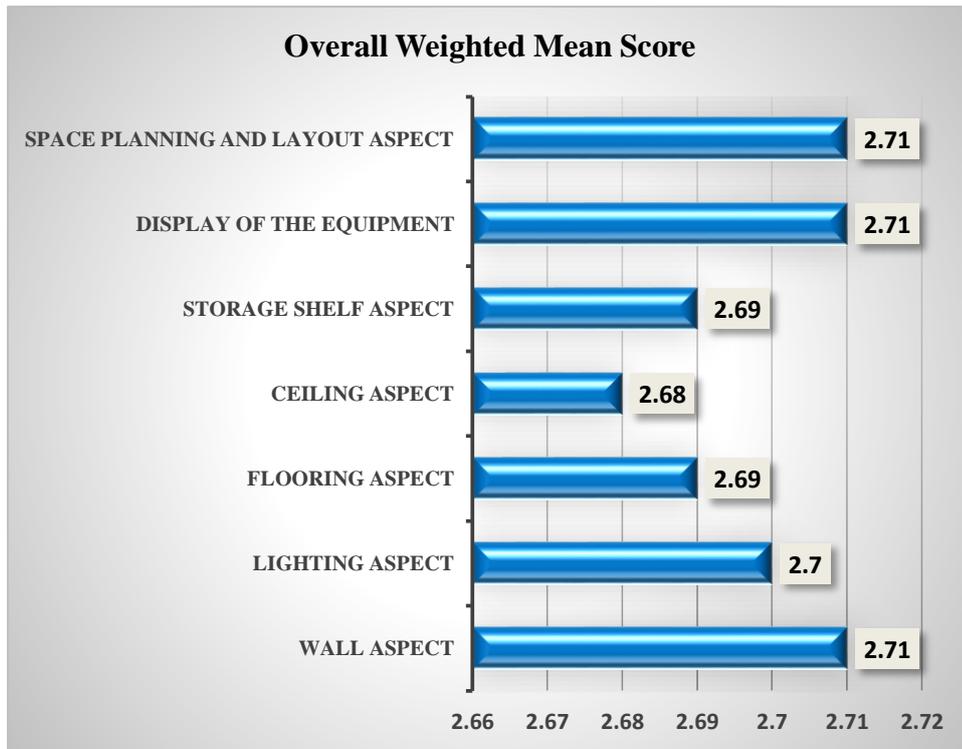


Figure 13: Overall Weighted Mean Score of the opinion of the respondents regarding designed Household Equipment Museum

Section-III

Testing of Hypotheses

Hypothesis were formulated to find out the relationship between selected variables of the present study. In the present investigation, as per the nature of variables t-test and Analysis of the Variance (ANOVA) were computed. For the purpose of statistical analysis, the hypotheses were formulated in null form. The results are presented in this section:

Ho₁: There exists no variation in the opinion of the respondents regarding designed Household Equipment Museum with their selected Personal Variables (Age, gender occupation and educational status) and work-variables (years of experience, number of projects undertaken by the professionals)

This broad hypothesis was made into two specific hypotheses.

Ho_{1.1}: There exists no variation in the opinion of the respondents regarding the designed Household Equipment Museum with their selected Personal Variables (age and educational status) and work-variables (years of experience, number of projects undertaken by the professionals)

Analysis of Variance (ANOVA) was computed to test the variation of the opinion of the respondents regarding Household Equipment Museum with their age (in years), educational status, Number of projects undertaken and years of experience. The F value was not found significant in the opinion of the respondents regarding the designed design of household equipment museum. Thus, the null hypothesis was accepted (Table 15).

Table 15: Analysis of variance showing variation in the opinion of the respondents regarding Household Equipment Museum with their age (in years), educational status, years of experience and Number of projects undertaken

Sr. No.	Selected Variables	df	Sum of Squares	Mean Squares	F-Value	Level of Significance
1	Age (in years)					
	Between Groups	2	226.6119	113.306	3.073	N.S*
Within Groups	118	27511.09	235.1375			
2	Educational Status					
	Between Groups	2	351.7685	175.8842	3.073	N.S*
Within Groups	118	27354.87	235.8178			
3	Year of Experience					
	Between Groups	2	1277.809	638.9045	3.744	N.S*
Within Groups	118	26459.89	226.1529			
4	Number of projects undertaken					
	Between Groups	2	269.4697	134.7348	3.073	N.S*
Within Groups	118	27468.23	234.7712			

Note: df = Degree of Freedom N.S = Not Significant

H_{01,2}: There exists no difference in the opinion of the respondents regarding designed Household Equipment Museum with their gender and occupation

The computation of t-value exhibited a significant difference in the opinion of the respondents regarding designed Household Equipment Museum with their gender at 0.01 level of significance. The computation of t-value also exhibited a significant difference in the opinion of the respondents regarding designed Household Equipment Museum with their Occupation at 0.05 level of significance. Thus, the null hypothesis was rejected (Table 16).

Table 16: t- test showing variation in the opinion of the respondents towards the designed Household Equipment Museum with their gender and occupation

Sr. No.	Selected Variables	Mean Score	t-value	df	Level of Significance
A	Gender				
1.	Male	123.32	2.86	115	0.01
2.	Female	131			
	Occupation				
1.	Interior Designer	127.1	0.67	115	0.05
2.	Architect	205.37			

Note: df = Degree of Freedom N.S = Not Significant

Section IV

Display of the designed and developed Household Equipment Museum for public.

The museum was officially inaugurated on January 30, 2025, at the “आत्माश्रित” Vocational Skill Development Centre, of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. The inauguration was graced by Hon’ble Vice Chancellor, Prof. Dhanesh Patel. The museum remained open for visitors for two days i.e. January 30th and 31st, 2025, attracting a diverse audience, including toddlers, elderly individuals, tourists, and distinguished personalities.



Plate 36: Inauguration of the Household Equipment Museum by Honorable Vice Chancellor Prof. (Dr.) Dhanesh Patel



Plate 37: Glimpse of Inauguration of the Household Equipment Museum



Plate 38: Glimpse of visitors who visited the Household Equipment Museum



Plate 39: Glimpses of eminent personalities who visited the display of Household Equipment Museum



Plate 40: Visitors at the display of Household Equipment Museum



Plate 41: Media coverage in Times of India



Plate 42: Media coverage in Government of Gujarat Information Department

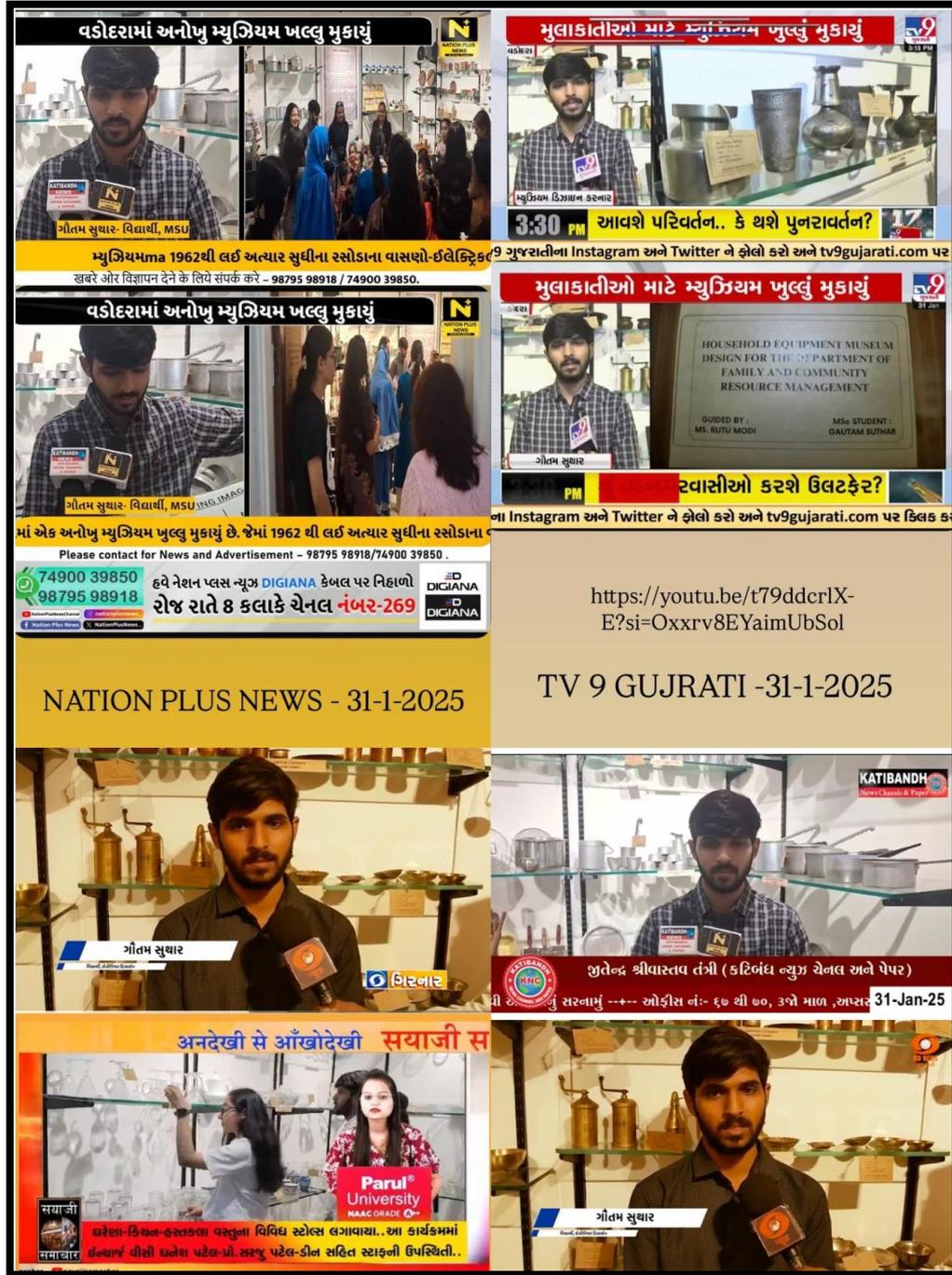


Plate 43: Coverage by Electronic Media

SUMMARY, CONCLUSION AND RECOMMENDATIONS



CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The primary role of a museum is to be a source of education, whether it be through showcasing collections of cultural products such as pieces of art, telling the story of something. Museums aid in collecting and preserving the objects, materials of religious, cultural and historical value. They are also a source of tourist attraction and entertainment. Museums aid in preserving the cultural heritage. They are considered as a storehouse of old artefacts, sculptures, objects and history. They are a huge resource for conducting researches and a storehouse of knowledge and stories. With urbanization and industrialization, the availability of indigenous utensils is decreasing day by day.

As average homemaker performs all the household chores herself. Mechanization of each equipment is being invented for ease of individuals due to change in dynamics of family living. Due to the new lifestyle of living in nuclear families and lack of time on hand of homemakers, the changing roles of males and females in modern family living are some of the reasons of diminishing cultural and indigenous utensils and equipment.

With the modern lifestyle, the mortar is replaced with the food processor, chulas are being replaced with hob, and iron kadhai is being replaced with the nonstick pans. Modern equipment has radically altered the physical demands on homemaker's energy. Refrigerators, washing machines, televisions, irons, blenders and mixers, toasters, pressure cooker, microwave ovens and other such equipment are becoming part of Indian homes especially those in urban areas and working homemakers. The number of household equipment and appliances are increasing in modern homes which is resulting in diminishing purchase of old nonmechanical household equipment.

The review of literature revealed that studies on areas such as Household equipment its challenges (Lovinghood and Lytton, 1984); Development of the continuing education for museum staff in Scandinavia (Sonne et al., 2023); Museum development in Bosnia and Herzegovina as an indicator of the positive socio-cultural impact of tourism (Zunic et al., 2023); evolution and development of museum buildings (Kurbatova et al., 2023); cultural heritage museums in community development (Abiodun, 2024); Development of Museums as Tourism Attraction based on Virtual Digital in Ubud Bali

(Angana,2024); Museum based sleep education: development and evaluation of Popup exhibits for children and families (Le Blanc et al.,2024); activities of modern school museums along the path of dep digitalization and methodical development of personalized educational environment (Красахов , 2024); Prerequisites and Trends in the Development of Virtual Museums in the XXIST Century (Trofimova and Kazakova, 2024); The Role of Cultural Heritage Museums in Community Development (Abiodun, 2024). The review revealed that studies were done outside India. A dearth of research was found on the design and development of museum on Household Equipment; thus, the present study was formulated.

The present study was aid in design and development of museum on Household Equipment for the Department of Family and Community Sciences, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. The museum was an asset to the curation of various household equipment of numerous base materials like iron, brass, copper, alluminium, stainless steel and nonstick. The museum has also housed a variety of traditional and indigenous household equipment. The museum has act as a learning tool to the students by showcasing a varied variety of household equipment with their history, use, care and maintenance.

Statement of the Problem The present study aimed to propose a design of Household Equipment Museum in the Department of Family and Community Resource Management, Faculty of Family and Community Science.

Objectives of the study

1. To assess the existing space assigned for Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.
2. To develop a detailed design and cost estimation of the Household Equipment Museum.
3. To implement the design proposed by the researcher for Household Equipment Museum.
4. To assess the opinion of interior designers and Architects regarding the

appropriateness of selected aesthetic and functional attributes of Household Equipment Museum in the Department of Family and Community Resource Management.

Hypothesis of the Study

1. There exists variation in the opinion of the respondents regarding designed Household Equipment Museum with their selected Personal Variables (Age, gender, occupation and educational qualification) and work variables (years of experience, number of projects undertaken by the professionals)

Delimitations of the study

1. The study was limited to the Architects and Interior Designers of Gujarat State.
2. The study was limited to the Architects and Interior Designers with an experience of 2 years.

Methodology

The present study was an action research project to design and develop the provided area according to the needs and preferences of the authorities. The locale of the study was Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. The unit of inquiry were 120 Architects and Interior Designers of Gujarat State established in their respective fields with minimum 2 years of experience. In light of the objectives framed for the study, an observation sheet and questionnaire was prepared to collect the needed information regarding the appropriateness of selected aesthetic and functional attributes of Household Equipment Museum in the Department of Family and Community Resource Management.

The questionnaire was divided in two sections where section I consisted of Background information of the professionals. This section comprised of information regarding personal, and work variables of the respondents covering details of the Age (in years), gender, educational qualification, and work variables covering number years of experience, and number of projects finished. The section II contained information on Opinion of the Professionals regarding household equipment museum on various aspects namely design, aesthetics, functionality, space utilization, quality, durability, proportion, the convenience of use, and aesthetic value of the designed functional and aesthetical elements. The opinion of the respondents was recorded using a rating scale

that includes the categories "Agree," "Undecided," and "Disagree," which was completed by the respondents themselves.

Major Findings

The major findings of the study were presented in four sections as follows:

Section I – Design and Development of Household Equipment Museum

Phase I: Assessment of the existing space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

For the present study, the researcher was assigned a space of Household Equipment Museum at “आत्माश्रित” Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. Recognizing the untapped potential of this area, the researcher designed to implement the research idea within the space.

While measuring the allotted area it was found that the total built up area of the household equipment museum was 230 Sq feet, length 16'.6”, width 13' and height 11'.1”. The length of the lobby area was 14'.10”, width 7'.11” and 11'.1”. The walls of the museum were whitewashed in off-white colour. The texture of the wall was smooth. The flooring of the household equipment museum was having ceramic tiles. It was also observed that there was no false ceiling and the ceiling had normal slab with 15mm plaster with off-white color. There was one door and two windows in the museum with 4 tube lights and 2 fans for lighting and ventilation in the room.

Phase II: Designing of the space of Household Equipment Museum.

The researcher designed the Household Equipment Museum in alignment with the needs, preferences and budget of the Department of Family and Community Resource Management. Using CAD software, 2D drawings were developed. The designs were reviewed and approved with guidance from the guide and the In-charge Head of the Department.

Phase III: Development 3D walkthrough of designed Household Equipment Museum.

The researcher developed a 3D walkthrough of the Household Equipment Museum using SketchUp and Enscape software, showcasing the complete design of the museum located within the Department of Family and Community Resource Management at the Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda. This interactive walkthrough enhances visitor engagement by enabling 24/7 access and global accessibility. It also offered detailed insights into the museum's exhibits and layout. Additionally, the walkthrough serves as a powerful tool for attracting visitors through virtual previews and helps preserve the museum's design digitally.

Phase IV: Cost estimation of the designed Household Equipment Museum

The fourth phase of the development of Household Equipment Museum was Cost estimation where the researcher went to the market and found out the cost of each material which he was going to use in developing Household Equipment Museum which included colour, electrical work, concealing the existing windows, installation of Air Conditioner, Focus Lighting, Wall panels, door repainting and door lock. The total cost of implementing the design was **Rs. 1,75,888**.

Phase V: Development of the designed Household Equipment Museum.

The fifth and last phase of designed Household Equipment Museum was implementation of the proposed design. Following approval, the researcher implemented the designs, beginning with repainting the room and foyer area. To enhance aesthetics, light fixtures, fans, and windows were concealed. It also involved electrical work, including the installation of focus lights and an AC plug. As part of the development of the Household Equipment Museum, the door was repainted, and the door lock was replaced to give ancient look.

For display enhancements, wall brackets and aluminium channels were painted black and carefully installed in designated areas. The brackets were arranged in varying sizes to accommodate and showcase a diverse range of equipment. A marble slab was placed on a wooden table to further elevate the museum's visual appeal. After setting

up the museum, the researcher curated the utensils and equipment, ensuring an organized display. Labels were created, with the guidance of the advisor, to facilitate visitor navigation.

Section II- Opinion of the Interior Designers and Architects for the developed Household Equipment Museum of The Department of Family and Community Resource Management, The Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

Background Information of the respondents: This section contained background information of the respondents regarding age (in years), gender, educational qualification and occupation. This section also covered work-related information wherein years of experience, number of projects completed and type of projects finished are included.

The respondents were categorized in the age group from 24-38 years. The data revealed that 49.17 per cent of the respondents were aged between 24-28 years followed by 35.83 per cent who were aged between 29-33 years of age. The mean age of the respondents was 31.03 years. The data regarding the gender of the respondents revealed that 58.33 per cent of the respondents were males followed by 41.67 per cent of females. On scrutiny of the educational qualification, it was revealed that 62.50 per cent of the respondents were graduates followed by 19.17 per cent of the respondents had pursued Diploma. It was also reported that 18.33 per cent of the respondents pursued Post Graduation. The data regarding occupation revealed that 75 per cent of the respondents were Interior Designers followed by 25 per cent of the respondents were Architects.

The data regarding work related information revealed that 45.83 per cent of the respondents had 2-6 years of experience as Interior Designers and Architects respectively followed by 27.50 per cent of the respondents had 7-10 years of experience in their field. The data also revealed that 26.67 per cent of respondents had experience of 11-15 years in their respective field. On scrutinizing the number of projects completed revealed that 66.67 per cent of the respondents had completed 4-10 projects followed by 19.17 per cent of the respondents who had completed 11-18 number of projects. The data on type of project completed revealed that 41.67 per cent

of the respondents had completed Commercial projects followed by 31.67 per cent of the respondents had completed Residential projects and 26.67 per cent of the respondents had completed residential and commercial projects.

Opinion the respondents on the developed Household Equipment Museum

This section dealt with the information on Opinion of the Interior Designers and Architects regarding the designed Household Equipment Museum on aspects such as wall, lighting, flooring, ceiling, storage shelves, display, space planning and layout and tags, signages and overall design of the designed museum design.

The data on opinion regarding wall aspect of designed Household Equipment Museum revealed 90 percent of the respondents agreed that “wall mounted displays and shelves are essential for maximizing exhibit space” followed by 83.33 per cent of the respondents agreed on “the color of the wall makes a visitor feel relaxed”. On further scrutiny, the data revealed that 76.67 per cent of the respondents agreed that “the color of the wall made the room appear spacious”.

The data regarding opinion regarding lighting aspect of designed design for Household Equipment Museum revealed that 93.33 per cent of the respondents agreed that “The lighting provided in the museum makes the room appear spacious” followed by 76.67 per cent of the respondents agreed on “Spotlighting was used effectively to draw attention to important and feature exhibits”. 75.00 per cent of the respondents agreed that “the colour of the lighting selected for the museum allows clarity of eye movement” and 73.33 per cent of the agreed respondents that “the room looks royal by using appropriate lighting” and “Ambient lighting contributes positively to the overall atmosphere of the museum” respectively.

The findings on flooring aspect of for Household Equipment Museum revealed that (78.33 per cent) of the respondents agreed that “the flooring material seems easy to maintain”. A similar percentage of respondents i.e.73.33 per cent agreed on “flooring complements the colour scheme and overall aesthetic of the museum’s interior design” and “material of flooring allows easy movement of heavy equipment”.

The data on ceiling aspect revealed that 85 per cent agreed that “the ceiling height was high enough to create a sense of grandeur” followed by 81.67 per cent respondents also agreed that “the colour of the ceiling complements with the wall colors to create

a cohesive look”. The data also highlighted that 70 per cent of respondents agreed that “the ceiling helped in concealing unsightly infrastructure” followed by 68.33 per cent of respondents who also agreed that “the ceiling helped to create a more polished look” and “ceiling height was high enough to showcase large exhibits”.

The findings on storage shelf aspect for Household Equipment Museum revealed that 81.67 per cent of respondents agreed that “the storage shelf provides enough space to display” and “the storage design is visually appealing”. A similar percentage of respondents i.e. 73.33 per cent agreed that “the storage shelf material is durable and resistant to scratches” and “storage shelf is secure to prevent damage to exhibits”.

The data on the opinion of respondents regarding display of the equipment aspect for Household Equipment Museum revealed that 81.67 per cent of respondents agreed that “the display of equipment is cohesive”. 78.33 per cent of the respondents agreed that “the displayed equipment’s have enough clearance space”.

The data on the opinion of the respondents regarding space planning and layout aspect for Household Equipment Museum revealed that 81.67 per cent of the respondents agreed that “the interior layout maximized the use of available space for displaying exhibits” followed by 78.33 per cent of respondents agreed that “the layout of the museum provides a logical flow and navigation for visitors”.

The data on opinion of respondents regarding tags, signages and way findings aspect revealed that 83.33 per cent of the respondents agreed that “the signages and wayfinding elements are clear to assist visitors in navigating the museum” followed by 73.33 per cent of respondents agreed that “signages provided useful information”. The data also revealed that 68.33 per cent of the respondents agreed that “the design of wayfinding elements complements the overall interior aesthetic” followed by 61.67 per cent of the respondents agreed that “the signages and exhibit information add value to the visitor experience”.

The on overall design of the museum revealed that 76.67 per cent of the respondents opined that “the design of the museum successfully communicated the historical and cultural importance of household equipment” followed by 73.33 per cent of respondents agreed that “the design of the museum has allowed physical interactivity”. The data also revealed that 70 per cent of the respondents “the found overall design of museum

is sustainable”.

The overall weighted mean score of Opinion of the respondents regarding design of the Museum of designed Household Equipment Museum revealed that wall aspect, display of the equipment and space planning and layout aspect was ranked first i.e. 2.71. The flooring aspect and storage shelf aspect of the overall design of the designed design for the Household Equipment Museum was ranked second i.e. 2.69.

Section III- Testing of Hypothesis

Analysis of Variance (ANOVA) was computed to test the variation of the opinion of the respondents regarding Household Equipment Museum with their age (in years), educational status, Number of projects undertaken and years of experience. The F value was not found significant in the opinion of the respondents regarding the designed design of household equipment museum. Thus, the null hypothesis was accepted.

The computation of t-value exhibited a significant difference in the opinion of the respondents regarding designed Household Equipment Museum with their gender at 0.01 level of significance. The computation of t-value also exhibited a significant difference in the opinion of the respondents regarding designed Household Equipment Museum with their Occupation at 0.05 level of significance. Thus, the null hypothesis was rejected.

Section IV- Display of the designed and developed Household Equipment Museum for public

The museum was officially inaugurated on January 30, 2025, at the “आत्मश्रित” Vocational Skill Development Centre, of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. The inauguration was graced by Hon’ble Vice Chancellor, Prof. Dhanesh Patel. The museum remained open for visitors for two days i.e. January 30th and 31st, 2025, attracting a diverse audience, including toddlers, elderly individuals, tourists, and distinguished personalities.

Conclusion

The study successfully designed and developed the Household Equipment Museum at the “आत्मश्रित” Vocational Skill Development Centre, Department of Family and Community Resource Management, The Maharaja Sayajirao University of Baroda. The project involved meticulous assessment, space planning, 3D visualization, cost estimation, and implementation, resulting in a functional and aesthetically appealing museum. The opinions of interior designers and architects affirmed the effectiveness of the design in terms of wall treatment, lighting, flooring, ceiling, storage, display, and signage. Statistical analysis revealed significant differences in opinions based on gender and occupation, highlighting diverse perspectives on the museum’s design. The official inauguration on January 30, 2025, marked the culmination of the project, drawing visitors from various demographics and successfully preserving the historical and cultural significance of household equipment.

Implications of the Study

The finding of the present study had the following implications:

For the Field of Family and Community Resource Management

This study contributes to the field of Family and Community Resource Management by preserving cultural heritage, enhancing educational resources, and demonstrating efficient space utilization. It promotes cost-effective interior planning while integrating technology through 3D walkthroughs for improved accessibility. The project serves as a model for optimizing community spaces, enriching visitor experiences, and supporting research in household equipment management for other academic institutions also.

For Architects

The study will highlight efficient space utilization, functional layout planning, and the integration of design elements, providing architects with insights into designing community-centered spaces and museums.

For Interior Designers and Students

It offers practical applications of lighting, material selection, display techniques, and

aesthetic enhancements, helping designers create visually appealing and functional interiors for educational and cultural spaces and the research serves as a learning resource for students in architecture, interior design, and family and community resource management, offering real-world insights into museum design, digital visualization (3D walkthroughs), and the role of interiors in cultural preservation.

Recommendation for Future Studies

1. The study can be conducted on to explore the use of augmented reality (AR) and virtual reality (VR) for enhanced interactive museum experiences.
2. Studies can focus on Sustainable and Eco-Friendly Design incorporating environmentally friendly materials and energy-efficient solutions for museum interiors.
3. Further research can assess visitor engagement, accessibility, and usability to improve museum design for diverse demographics.
4. A comparative analysis of similar museums across different regions can provide insights into best practices in design and management.
5. Future studies can evaluate the long-term effectiveness of the Household Equipment Museum in terms of educational impact, cultural preservation, and visitor satisfaction.

BIBLIOGRAPHY



BIBLIOGRAPHY

- Abiodun, O. D., & Abiodun, F. (2024). The role of cultural heritage museums in community development. <https://doi.org/10.13140/RG.2.2.15495.20640>
- Anggana, A., Mahadewi, N. M. E., Par, M., Hardini, W., & Bestari, N. M. P. (2024). Development of museum as a tourism attraction based on virtual digital in Ubud Bali. In *Technology and business model innovation: Challenges and opportunities* (pp. 43-56). Springer. https://doi.org/10.1007/978-3-031-55911-2_43
- Britannica, T. Editors of Encyclopaedia. (2024). Home appliance. *Encyclopedia Britannica*. <https://www.britannica.com/technology/home-appliance>
- Chandrasekaran, T. (2017). The role of museums in providing educational experiences and the importance of engaging visitors as active participants.
- Gada, R. (1982). A study of use of solar cooker by the beneficiaries of the subsidised solar cooker scheme, Baroda [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Gardner, D. P. (1983). *A nation at risk: The imperative for educational reform: A report to the nation and the secretary of education*. The Commission.
- Gupta, K. (1995). Survey of cooking utensils used by Gujarati and Punjabi families [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Hooper-Greenhill, E. (Ed.). (1996). *The educational role of museums*. Routledge.
- Karimova, G. R., & Idrisova, R. R. (2023). Museum tourism in the post-pandemic period: Problems and prospects of development. *Observatory of Culture*, 20(4), 351-357. <https://doi.org/10.25281/2072-3156-2023-20-4-351-357>
- Kaul, S. (1980). Ergonomic assessment of selected household utensil handles [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Kurbatova, M. S., Dunaevskiy, E., & Dunaievska, A. V. (2023). Evolution and development of museum building. *Observatory of Culture*, 20(4), 351-357. <https://doi.org/10.25281/2072-3156-2023-20-4-351-357>

- LeBlanc, C., Cruz, A., & Scullin, M. K. (2024). Museum-based sleep education: Development and evaluation of pop-up exhibits for children and families. *Sleep*, 47(Supplement_1), A473-A473.
- Lovingood, R. (1984). Household equipment research: Past accomplishments, challenges for the future. *Home Economics Research Journal*, 12(2), 172-179.
- Munley, M. (2012). Early learning in museums: A review of literature. Paper prepared for the Smithsonian Institution's Early Learning Collaborative Network.
- Munro, E. (2013). "People just need to feel important, like someone is listening": Recognising museums' community engagement programmes as spaces of care. *Geoforum*, 48, 54-62. <https://doi.org/10.1016/j.geoforum.2013.04.008>
- Nasrin, S., & Abduraheem, K. (2021). Educational role of museum in India. *International Journal of Creative Research Thoughts*, 9(8), b611-b615.
- Salunke, R. (1969). Survey of utensils, appliances & related supplies in the kitchens of some selected university staff quarters of M.S.U. Baroda [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Saxena, M. (1980). A study of consumer experiences towards electric iron and blender in terms of their utility [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Sethi, B. (1978). A study of kitchen-sink heights [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Shamsidar, A., Mohamed, Y. A., Wan, Z. M. Y., & Mohd. Z. M. Taib. (2015). The role of museums in providing educational experiences and the importance of engaging visitors as active participants. *AicE-Bs2014Berlin* (formerly AicE-Bs2014Magdeburg) Asia Pacific International Conference on Environment-Behaviour Studies, 12(2), 114-119.
- Singh, A. (1969). Performance characteristics of heating appliances & utensils in terms of heat distribution & thermal efficiency [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.

- Singhal, S. (2002). Electric water purifiers analysis of buying decision process and bacteriological quality of water. [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Sonne, L., Hansen, A., Banik, V. K., Wollentz, G., & Djupdræt, M. B. (2022). Development, test, and evaluation of new continuing education for museum staff in Scandinavia: Results from the Nordplus Adult Project "Increased Learning through Social Spaces."
- Stevens, K. B., Tracy, M., Baker, M., & Wolters, B. (2020). *Still left behind: How America's schools keep failing our children*. American Enterprise Institute. <https://www.aei.org/wp-content/uploads/2020/09/Still-Left-Behind-Final1.pdf?x91208>
- Talati, H. (1999). Practices and satisfaction of the homemakers regarding microwave oven [Unpublished master's dissertation]. The Maharaja Sayajirao University of Baroda, Vadodara.
- Weber, K. E. (2022). The role of museums in educational pedagogy and community engagement. [Published dissertation]. College of Education Theses and Dissertations, DePaul University. https://via.library.depaul.edu/soe_etd
- Zunic, L., Kosic, K., & Pivac, T. (2023). Museum development in Bosnia and Herzegovina as an indicator of the positive socio-cultural impact of tourism. *Revue Roumaine de Géographie / Romanian Journal of Geography*, 67(2), 131-149. <https://doi.org/10.59277/RRG.2023.2.02>
- Красанов, Т. Г. (2023). Prospects for creating and modernizing school museums in the context of digitalization and personalized educational environment development.

WEBLIOGRAPHY



WEBLIOGRAPHY

1. <https://www.britannica.com/topic/museum-cultural-institution>, retrieved on 10.6.2024
2. Extraordinary General Assembly of ICOM, 2022, retrieved on 10th July '2023.
3. <https://icom.museum/en/resources/standards-guidelines/museum-definition/>,
retrieved on 8.11.2024
4. <https://egyankosh.ac.in/bitstream/123456789/85128/3/Unit-19.pdf> retrieved on
3.10.2024
5. <http://www.historyofmuseums.com/museum-facts/types-of-museum/>, retrieved on
5.10.2024
6. https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S000829IC/P001546/M024843/ET/1510308960P15-M01-Museum-Meaning,Definition,ScopeFunction-ET.pdf,
retrieved on 7.10.2024

APPENDICES



12 **APPENDIX I**
OBSERVATION SHEET
SECTION I

Information related to the structure of the Household Equipment Laboratory

1. Total built up area of Household Equipment Laboratory

2. Dimension of the Household Equipment Laboratory

Length - _____

Width - _____

Height - _____

3. Finish of the wall of the Household Equipment Laboratory

Wall/ Finish	Unfinished	Whitewash	Distemper	Oil/ Enamel paint	Rough plaster	Finished Plaster	Any other
East wall							
West wall							
South wall							
North wall							

4. Dimension of the Lobby area of the Household equipment Laboratory

Length - _____

Width- _____

Height - _____

5. Finish of the wall of the Lobby area of the Household equipment Laboratory

Wall/ Finish	Unfinishe d	Whitewash	Distemper	Oil/ Enamel paint	Rough plaster	Finished Plaster	Any other
East wall							

West wall							
South wall							
North wall							

6. Colour of the wall: East _____ West _____ North _____ South _____

7. Shade of the wall:

1. Light shade
2. Medium shade
3. Dark shade

8. Texture of the wall :

1. Smooth
2. Medium
3. Rough

9. Material of construction:

Wall / Material	Bricks / stone Plastered	Brick Unfinished	Concrete	Mud	Any Other specify
East wall					
West wall					
South wall					
North wall					

10. What type of flooring materials is used in the Household Equipment's Laboratory

1. Hardwood
2. Laminate
3. Tile

4. Carpet

11. Type of ceiling in the Household Equipment in the Laboratory

12. Type of light used in the Household Equipment's in the Laboratory

a. Number of Tube lights installed _____

b. Number of Bulbs installed _____

13. Details regarding Windows and Doors

Door		Windows	
Number		Number	
Length		Length	
Breadth		Breadth	
Width		Width	

APENDIX II

CONSENT FORM



Est. 1949
NAAC Accredited 'A+' Grade

DEPARTMENT OF FAMILY AND COMMUNITY RESOURCE MANAGEMENT FACULTY
OF FAMILY & COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

CONSENT FORM FROM THE RESPONDENTS

Dear Respondent

I am Gautam Suthar, Sr. M.Sc. student of Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Gujarat. For the partial fulfilment of my Master's degree, I am conducting research on "Designing of Household Equipment Museum in the Department of Family and Community Resource Management, Faculty of Family and Community Sciences"

The objectives of the study are:

1. To assess the existing space assigned for Household Equipment Museum at "आत्मश्रित" Vocational Skill Development Centre of the Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.
2. To develop a detailed design and cost estimation of the Household Equipment Museum.
3. To implement the design proposed by the researcher for Household Equipment Museum.
4. To assess the opinion of interior designers and Architects regarding the appropriateness of selected aesthetic and functional attributes of Household Equipment Museum in the Department of Family and Community Resource Management.

I am highly interested to know your opinion regarding the designed and developed Household Equipment Museum. If you agree to participate in this research study, you will be asked to complete a questionnaire.

Prior to that, I humbly request that your participation in this study will be completely voluntary and all efforts will be taken to protect your identity and keep the information confidential. Only the researcher will have access to the responses. Your personal information will only be used to contact you and your name will not be revealed with any research findings. If for any reason during this study you do not feel comfortable, you may leave the study immediately.

If you have any further questions concerning this study, please feel free to contact me through: Phone no.: 7069749009

Email ID: suthargautam45@gmail.com

To participate, please put (/) tick mark on "I Agree" to complete the feedback form for the research study.

Your participation will be greatly appreciated.

- I AGREE
- I DISAGREE

Name & Signature of the respondent: Jignesh Makwana

Researcher

Mr. Gautam Suthar
M.Sc. Student
FCRM Department
FFCSc, MSU

Research Guide

Ms. Rutu Modi
Temporary Assistant Professor
FCRM Department
FFCSc, MSU

APPENDIX III
QUESTIONNAIRE

Section I-
Background
Information

1. Name: _____
2. Age (in years): _____
3. Gender:
 - a. Male
 - b. Female
 - c. Other
4. Occupation:
 - a. Interior Designer
 - b. Architect
5. Educational Qualification:
 - a. Diploma
 - b. Graduation
 - c. Post Graduation
 - d. Doctorate
6. Years of Experience (in years): _____
7. Number of Projects: _____
8. Locale of Residence: _____
9. Types of Projects undertaken: Commercial Residential

Section II

Opinion of the Interior Designers and Architects

Below are the statements related to the aspects of the proposed design for Household Equipment Museum. Kindly give your opinion by putting the [✓] tick mark in the appropriate column.

Sr. No.	Statements related to wall aspect	Agree	Undecided	Disagree
1	Wall-mounted displays and shelves are essential for maximizing exhibit space.			
2	By incorporating glass on walls provide a sense of openness.			
3	Colour of the wall depicts a sense of safety and quietness			
4	Colour of the wall make a visitor feel relaxed			
5	Colour of the wall is appropriate			
6	Colour of the wall highlights the displayed utensils			
7	Neutral color scheme of the museum creates an engaging atmosphere.			
8	Colour of the museum make the room appear spacious			
	Statements related to lighting aspect			
1	Lighting provided in the museum makes the room appear spacious.			
2	Lighting provided in the museum highlights the utensils displayed in the museum			
3	Use of lighting complements the design of the room			
4	Colour of the lighting selected for the museum allows clarity of eye movement			
5	Room looks royal by using appropriate lighting			
6	Ambient lighting contributes positively to the overall atmosphere of the museum.			
7	Spotlighting is used to effectively draw attention to important and featured exhibits			
	Statements related to flooring aspect			

1	Flooring material is easy to maintain.			
2	Flooring complements the colour scheme and overall aesthetic of the museum's interior design.			
3	Material of flooring allows easy movement of heavy equipment.			
	Statements related to ceiling aspect			
1	Ceiling height is high enough to create a sense of grandeur.			
2	Ceiling is high enough to showcase large exhibits.			
3	Ceiling helped conceal unsightly infrastructure.			
4	Ceiling helped to create a more polished look.			
5	Ceiling color complements the wall colors to create a cohesive look.			
	Statements related to storage shelf aspect			
1	Storage shelf provides enough space to display			
2	Storage shelves are well-lit to highlight the exhibits.			
3	Storage shelf material is durable and resistant to scratches.			
4	Storage shelf is flexible and adaptable to accommodate different exhibit sizes and shapes.			
5	Storage shelf is secure to prevent damage to exhibits.			
6	Storage shelf design is visually appealing.			
	Statements related to Display of the equipment			
1	Display of equipment's is cohesive.			
2	Enough space for putting labels for household equipment			
3	Displayed equipment's have enough clearance space			
4	Displayed equipment's is visible			
5	Display allows cleaning and maintenance of			

	the equipment displayed in the museum			
	Statements related to Space Planning and Layout aspect			
1	Layout of the museum provides a logical flow and navigation for visitors.			
2	Spatial arrangement accommodates the various types of exhibits effectively.			
3	Interior layout maximized the use of available space for displaying exhibits.			
	Statements related to Tags, Signages aspect			
1	Signage and wayfinding elements are clear to assist visitors in navigating the museum			
2	Signage and exhibit information adds value to the visitor experience.			
3	Design of way finding elements complements the overall interior aesthetic.			
4	Signage provided useful information			
	Statements related to Overall Design of the Museum			
1	Overall design was sustainable			
2	Overall aesthetic of the museum designed is cohesive			
3	Design of the museum has allowed physical interactivity			
4	Design of the museum creates curiosity among the visitors			
5	Museum design successfully communicated the historical and cultural importance of household equipment.			

ABSTRACT



ABSTRACT

Museums play a crucial role in preserving and showcasing our shared history. They offer a unique learning, experience and display collections and more. A source of education and cultural enrichment, enhance student experience and a medium for free choice learning. A museum is public institution intent to preserving and sharing our culture. It acquires, conserve, and showcases artifacts and stories to promote learning, inspiration and community engagement.

Household equipment has changed a lot over time from basic tools to modern machines. And This study shows us how museums help to preserve and share the history of household equipment and how it continues to evolve and adapt to our changing needs.

The present study was undertaken to design and develop a Household Equipment Museum at the “आत्माश्रित” Vocational Skill Development Centre, Department of Family and Community Resource Management, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat. The research aimed to create a museum that would preserve and exhibit traditional and modern household equipment, thereby serving as an educational resource for students, researchers, and the general public. The study followed an action-oriented approach, involving space assessment, conceptual design, 3D visualization, budgeting, and implementation.

The initial phase of the study included an in-depth analysis of the available space within the centre to determine its suitability for housing the museum. Detailed planning was carried out, considering factors such as spatial organization, wall treatments, flooring, ceiling, lighting, display techniques, and signage. A comprehensive 3D walkthrough was developed to provide a virtual representation of the proposed design before actual implementation. Cost estimation was carried out to ensure financial feasibility, and appropriate materials were selected to enhance durability and aesthetic appeal.

To validate the design and functionality of the Household Equipment Museum, feedback was collected from 120 professionals, including interior designers and architects from different regions of Gujarat. A structured questionnaire was designed to assess various aspects such as spatial arrangement, lighting efficiency, material selection, display techniques, and overall aesthetics. The collected data were analysed using statistical tools such as ANOVA and t-tests to determine significant variations in

opinions based on gender and occupation. The results indicated notable differences in preferences, which helped refine the final design to better meet user expectations.

The museum was successfully inaugurated on January 30, 2025, and has since attracted visitors from diverse backgrounds, including students, academicians, and design professionals. The exhibits include an extensive collection of traditional and contemporary household equipment, demonstrating technological advancements and cultural heritage. The museum serves as an interactive learning space where visitors can explore the evolution of household tools and appliances over time.

The study highlights the importance of integrating interior design principles with cultural preservation efforts. By developing a well-organized and aesthetically appealing museum, the research contributes to academic enrichment and community engagement. The Household Equipment Museum stands as a testament to the effective use of design methodologies in creating meaningful educational resources. Future recommendations include expanding the collection, incorporating digital exhibits, and conducting periodic evaluations to enhance visitor experience and engagement.

Keywords: Household Equipment Museum, Design and Development, Interior Design, Cultural Preservation, Educational Resource, Museum Planning, Visitor Engagement.