

FROM KUTCHA TO PUCCA HOUSES: THE IMPACTS OF ARCHITECTURAL TRANSFORMATION ON THE MADHUBANI PAINTINGS OF BIHAR (INDIA)

SINENHLANHLA MEMELA*¹, GAURAV SIKKA**

Key-words: Architecture, transformation, living spaces, kutcha and pucca houses, Madhubani Painting, Bihar.

Abstract. The architectural transformation of the living space is happening worldwide and impacts the cultural use of space. The *habitus* concept is used to understand how the Mithila Art or Madhubani painting has been affected by architectural transformation. The main focus is whether the Hindi people of the Madhubani area can still paint for ritual ceremonies and worship gods, and how they adapt or respond to change. About twenty resident artists and five key informant experts were interviewed, including Curator and Director of the Bihar Museum, three artists, and teachers from Mithila Chitrakala Sansthan training institutes. There was also an observation of the Madhubani painting exhibited at the Bihar Museum, work done by student artists from Mithila Chitrakala Sansthan training institutes, and mentees mentored resident artists. The study reveals that living spaces are transforming in the Madhubani area, from kutcha to pucca houses. However, the cultural utilisation of the space of Madhubani painting is mainly seen in pucca houses. They still do Kohbar painting, decorate the courtyard for a wedding ceremony, decorate a house where they perform *puja*, and have a painting of their god for worship purposes; the reference is made to the god Ardhnarishwara. They have adapted their cultural utilisation of the space of Madhubani painting in pucca houses. The study reveals that the only change that has happened concerns the painting techniques and materials used. They no longer use colours derived from natural pigments from plants, animal dung, and rice paste; instead, they use artificial and acrylic colours. In addition, they no longer use cow dung as the house wall base; now, they can use any colour.

1. INTRODUCTION

Migration, urbanisation, modernisation, and changes in economic status have allowed the adaptation of foreign architectural styles, construction materials, and urban planning models (Frescura, 1981; Aikpehae *et al.*, 2016; Moroholo, 2023). The global dominance of Western architecture has resulted in the loss of the uniqueness of architectural identity and the replication of buildings worldwide. A reference is made to the missionaries and colonialists who introduced the construction material for building a house wall, such as sun brick or mortar, as well as zinc or corrugated iron for roofs. They also introduced new architectural styles, such as the high hipped roof and the parapet house design. Little is known about when the living space was transformed, and what happens to the cultural utilisation of the space.

The following section is the literature review, which discusses vernacular architecture and Madhubani paintings in India. It is followed by a discussion of the theoretical framework - *habitus* and the Madhubani district, respectively. The methodology is presented in Section three. The results section is divided into two parts: the first part discusses the Madhubani painting, and the second part discusses the impacts of architectural transformation on the Madhubani painting. The last chapter consists of a discussion and a conclusion.

* Senior Lecturer, Rhodes University, Lucas Avenue, Makhanda, South Africa, s.memela@ru.ac.za.

** Assistant Professor, A.N. College (Patliputra University), Patna, Bihar, India, gauravsikkageo@gmail.com.

¹ Corresponding Author

1.1 Literature Review on Madhubani Paintings and Vernacular Architecture

Halder and Pandey (2018) and Dhruw *et al.* (2023) provide a narrative on the historical development of Madhubani painting in Indian culture. Madhubani painting started traditionally as a domestic decoration and ritual expression in the ancient Kingdom of Mithila. It is now part of Indian cultural heritage and art; more emphasis has been placed on promoting and sustaining it (Dhruw *et al.*, 2023).

Madhubani paintings were made famous by King Janak, an ancient ruler of Mithila. He asked villagers to decorate their courtyard to capture his daughter's wedding to Lord Prince Rama (Agarwal, 2015; Gosh, 2020; Singh and Shyju, 2020). The Madhubani paintings use symbolic images such as lotus plants, bamboos, fish, birds, and snakes (Agarwal, 2015; Gosh, 2020; Singh and Shyju, 2020). The symbol represents the productivity and creation of life (Agarwal, 2015; Gosh, 2020; Singh and Shyju, 2020). The women of the families practised painting on the walls of the mud house during festivals and special occasions (weddings, the birth of children, Diwali, and Durga Puja) (Agarwal, 2015; Singh and Shyju, 2020). Before painting, the artist layers the house wall with cow dung and then applies any colour on the wall (Agarwal, 2015; Gosh, 2020; Singh and Shyju, 2020). Rice pastes and natural pigments derived from plants, animal dung, and minerals were initially used for painting. The painting depicted religious beliefs (Hindi mythology), flora, and fauna (Agarwal, 2015; Gosh, 2020; Singh and Shyju, 2020). Madhubani art is characterized by its detailed and intricate patterns. Artists use fine lines and geometric shapes to create elaborate designs.

Prasad and Sen (2021) analyse various Madhubani painting styles and symbolic values, focusing on bharni, aystha, Arijana, and tantric. The Bharni style was developed by the women of the Brahmin community. Paintings are done with various colours to depict the stories from traditional mythologies, such as Ramayana, Mahabharata, and other mythological characters from Hindu literature (Prasad and Sen, 2021). The Bharni style is bold and colourful, with rich contour lines. It depicts Hindu Gods and Goddesses like Ishnu, Krishna, Durga, Kali, Shiva, Ganesha, etc. Shiva and Radha are frequently used to symbolise equality of and amongst male and female (Prasad and Sen, 2021). The Ayastha style was developed by the women from the Kayastha community. It uses monochrome or two-coloured designs (Prasad and Sen, 2021).

Paintings often depict flowers, animals, and other natural aspects with exaggerated expressions. The themes are influenced by the surrounding natural environment and are exposed to the world, lifestyle, creativity, and socio-economic status (Prasad and Sen, 2021). The style is not limited to religious motifs and household rituals. The Arijana style has two sub-styles, Gobar and Godhana – or tattoo painting (Prasad and Sen, 2021). It was developed in the 1960s, by women from a low-income community who learned by observing the art of the upper-class families they worked for as domestic helpers. The paintings are less complicated, focusing on beauty rather than decoration. Women developed their exclusive style and expressed their art methodologies. Male artists often dominate the tantric painting style (Prasad and Sen, 2021). It uses symbolic representations of deities, geometric patterns, and cosmic diagrams. People use it for aesthetic and spiritual development, and transformation, often for meditation and ritual practices.

Dulal *et al.* (2025) further discuss *Kohbar* as one of the Madhubani paintings characterised by bold lines, vibrant colours, and intricate patterns. It is done using natural pigments and brushes made from bamboo sticks. The *Kohbar* is drawn on the house's side wall during a wedding to bless the couple. The painting symbolises blessings, protection, and prosperity. It depicts Hindu mythology, local folklore, and everyday life (Dulal *et al.*, 2025).

Varshney *et al.* (2023) use computer-based tools to classify Madhubani paintings based on design. The different classes used include the Bharni, Godna, Kachni, Kohbar, and Tantic styles. The aim is to ensure the preservation of precious art heritage (Varshney *et al.*, 2023). The Madhubani painting plays a significant role for women as a form of cultural identity, communication, resistance, and empowerment (Dhruw *et al.*, 2023). Since it is now commercialized, women who want to earn an income have used it

to tell their story of oppression and resistance. Prasad and Sen (2021) note how the Madhubani painting has evolved. It started as a female-dominated practice, and women from different income levels were impacted differently. Upper-class women often did not have much freedom to work outside and were voiceless, while men had the opportunity to choose their profession and support their families. Women continued to practice art, and their paintings focused on religion, spirituality, and oppression. Women from lower-income backgrounds who worked in the agriculture sector and as domestic helpers often had their paintings be about economic hurdles and life experiences. However, because of the commercialization of Mithila art's, women are all heavily involved in art without limits (Prasad and Sen, 2021).

Halder and Pandey's (2018) study discusses the possibility of applying Madhubani painting to textile articles (cushion cover, folder, and tablecloth), using hand painting. The designs were highly acceptable to respondents who participated in the study.

Yadav *et al.* (2024) refer to the status of Madhubani paintings in contemporary art. It is an important part of Mithila heritage, which has been passed from generation to generation. It is a celebrated Indian art that has impacted global markets (Yadav *et al.*, 2024). As noted by Gosh (2020) and Singh and Shyju (2020), the painting has extended to different products (such as upholstery, tableware, canvas, papers, bags, sarees, pots, dishes, fans, and other interior decorative elements), which are sold worldwide. It has also been commercialized internationally. Some of the local artists sell these paintings for a living. Figure 1 shows examples of Madhubani paintings in different forms. Award-winning artists and students from the Mithila Chitrakala Sansthan Training Institute produced the items in Figure 1.



Fig. 1 – Madhubani painting products

(Source: authors; Mithila Chitrakala Sansthan Training Institute; Jaweed, Priyadarshi and Pradeep Prabhakar, 2024).

There are studies on Madhubani paintings, but their focus differs from this one. Most pieces of literature on the Madhubani paintings reviewed for the study focus on analysing different styles, meanings, and symbolic values, commercializing, textile design, historical analysis, gender analysis, preservation of art heritage, the status of Madhubani art in contemporary art, and classification of Madhubani art. Singh and Shyju (2020) investigated challenges faced by the paused commercialisation of Madhubani paintings and how they can contribute to cultural tourism and revitalize art heritage in the Madhubani area. Gosh's (2020) article documents artists who were preserving paintings and have been applauded by the government of India. Another article aimed to protect the art form's originality (Srivastava, 2021). Rai and Masih (2022) provide a study review of Madhubani painting's journey so far. Their focus is on the history of Madhubani painting, how artists express their skills, and the role of various institutions by different institutions in promoting and preserving Madhubani painting (Rai and Masih, 2022). There is a limited understanding of how living space transformation influences Madhubani painting. There has been a transformation from vernacular to contemporary house architecture.

The side walls and floors of vernacular houses were initially used to draw Madhubani paintings, which have now changed. Srivastava and Das (2023) describe the types of indigenous houses found in India. The houses are one-storied with sloping roofs. The shape of the house is either circular or rectangular (Srivastava and Das, 2023). Rectangular house shapes are commonly built/used in the Madhubani area. The houses have courtyards used for religious practices and life stage ceremonies. They serve as private spaces for women and children, a space for drying grains and clothes, and provide open sky sleeping and ventilation to the interior space (Rapoport, 2007; Srivastava and Das, 2023).

Vernacular houses use building materials that are locally and naturally available, which is essential in mitigating natural disasters (Oliver, 2007; Srivastava and Das, 2023). The main materials used to construct the houses includes wood, bamboo, thatch, and Ikra, stone slab; mud, straw, and thatch, bamboo, and wood; stone-rammed earth blocks, wood; mud, wood, and thatch (Srivastava and Das, 2023). Indian vernacular architecture has changed in the 20th century. It has been influenced by the international architectural style (Chandel *et al.*, 2016). Buildings are now constructed using cement, steel, glass, and concrete (Srivastava and Das, 2023). Mishra (2021) notes that the Madhubani painting was originally made on the side walls and the floors. However, that has gradually changed as the painting has extended into different products (Gosh, 2020; Singh and Shyju, 2020).

Theoretical Framework: *Habitus*

The *habitus* concept is used to understand how Mithila Art or the Madhubani painting has been affected by the architectural transformation of the living space. The aim is to analyse the impacts of architectural transformation on the cultural utilisation of space, whether they can still paint for ritual ceremonies and worship gods, and how the Hindi of Madhubani of North Bihar, India, adapts or responds to change. The concept of *habitus* is often used to understand the impact of transformation; it was made famous by Pierre Bourdieu, a French sociologist (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). *Habitus* provides an in-depth understanding of what guides people's practices and their adaptation strategies given any circumstances (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). *Habitus* looks at the characteristics of a particular group, focusing on norms, values, habits, dispositions, and behaviour, which can guide how they feel, think, act, present themselves, and utilize the space (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). The norms, values, habits, dispositions, and behaviour are a product of how individuals are brought up and socialized (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). It should be noted that society creates and reproduces *habitus*; it is not fixed (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). When there is a change due to particular circumstances, people resist, adapt, or combine the characteristics of old and new *habitus* (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024).

Habitus has been used to analyse how the Algerian peasantry adapted to colonisation change (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). The arrival of the coloniser diluted the norms and values of Algerian natives. Some Algerians resisted adopting new capitalist norms and continued practicing subsistence and their own cultural habits, while others migrated to towns and worked for wages (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024). Others decided to maintain the ancient traits of the peasantry while adopting some capitalist norms (Bourdieu *et al.*, 2000; Navarro, 2006; Ndude and Memela, 2024).

Ahmad (2014) used the concept of *habitus* to understand tourist choices in tourism consumption in India. The findings reveal that tourists' consumption choices are based on the influence of others' past travel experiences, which can be produced and reproduced (Ahmad, 2014). *Habitus* has also been used to explore anti-bus dispositions, which has limited the middle class from using buses (Fitt, 2018). Participants rejected using buses because it was related to a low status, which derives from a pre-conscious feeling of incompatibility. The anti-bus disposition of buses is geographically limited, meaning it can change depending on location (Fitt, 2018).

Ndude and Memela (2024) used the *habitus* concept to analyse how the amaXhosa cultural utilisation of the space has been impacted by the architectural transformation. The focus was on the *rondavel*, the traditional family house, influenced by contemporary designs, in the rural area of the Eastern Cape Province, South Africa. Previously, traditional households were built in a circular shape, with mud walls and thatched roofs. Contemporary house designs have hip roof designs; house side walls were built using blocks, cement, and zinc roof sheets. There has been a clear move towards contemporary house designs. Despite the transformation, some amaXhosa people have found ways to continue practicing their culture by adapting or modifying some practices to fit the architectural change (Ndude and Memela, 2024). Some cultural practices are adapted to contemporary designs, e.g., sleeping arrangements and food preparation. While some prefer to keep traditional rondavels for ceremonies and communication with their ancestors, others can perform such practices within contemporary designs (Ndude and Memela, 2024). The spatial and gender division continues even in modern design. Childbirth no longer happens in the traditional rondavel due to advancements in healthcare and medical access (Ndude and Memela, 2024). The amaXhosa cultural practice of placing a coffin of the deceased person in the upper layer of the family house during the night of vigil has been modified since COVID-19 restrictions. However, the ritual of burning incense and communicating with ancestors still happens on the funeral day (Ndude and Memela, 2024). The findings showed that architecture can change, but culture remains the same. The space users find ways to adapt to the change (Ndude and Memela, 2024).

The concept of *habitus* helps us understand how people respond to change. Since Madhubani paintings are of national importance in India, it is essential to know how people respond to and are impacted by architectural transformation. Such a study can contribute to the continuation of the preservation of Hindi culture. The main focus is whether the Hindi people of the Madhubani area can still paint for ritual ceremonies and worship gods, and how they adapt or respond to change. The key questions were: are the Hindi people of the Madhubani area still able to paint for ritual ceremonies and worship gods in the contemporary house designs? And how has architectural transformation impacted the cultural utilisation of space?

1.2 Study area: the Madhubani Area

The study was conducted in a rural village called Madhubani, in northern Bihar, India, where the Mithila Art or Madhubani painting originated (Singh and Shyju, 2020). The state has a total geographical area of 94,163 km² and 38 districts (Singh and Shyju, 2020). India's 2011 census regards Bihar as the densely populated state in India, with an estimated population of 104,099,452. Figure 2 presents the geographical map of Bihar.

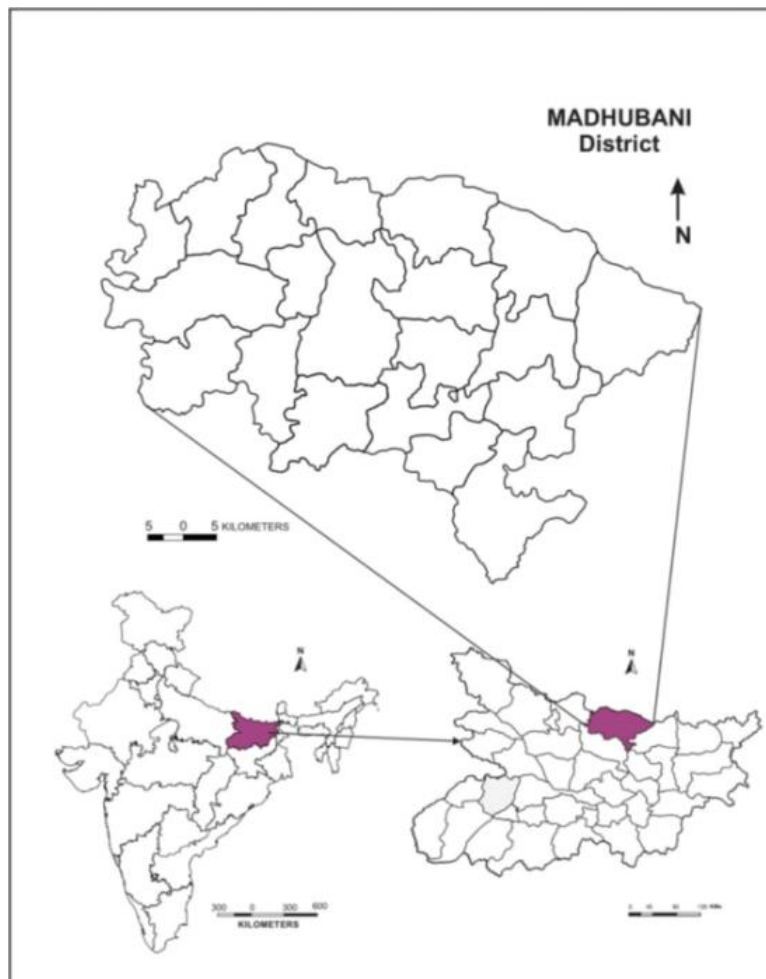


Fig. 2 – The study area map (Madhubani) (Source: Authors, 2024).

The Madhubani area is underdeveloped and has a high level of poverty. The area is dominated by painters from nearby villages, such as Jitwarpur, located 3 km away (Gosh, 2020). Regarding land use activities, the area is mainly low and mono-cropped with paddy and sugarcane plantations (Singh *et al.*, 2014). Agriculture is often rainfed, and the district is prone to floods due to major rivers in this region coming from Nepal (Singh *et al.*, 2014).

The area has become a cultural tourist attraction through its Madhubani painting products (Gosh, 2020). The Madhubani painting is a common household practice in the districts of north Bihar and Nepal's plains (Gosh, 2020). It was nationally and internationally noticed in 1934 after the tragic earthquake, which affected most of the villages in north Bihar. A British civil servant named William Archer was sent to this area to assess the earthquake's impacts, conduct a survey for future reconstruction, and discovered the paintings in the buildings (Gosh, 2020).

William Archer saw on the cracked house walls paintings of different Hindu Gods and motifs, including cattle, trees, turtles, parrots, love-birds, flowers, peacocks, snakes, water, horses, pots, suns, fish, and elephants (Szanton, 2014; Gosh, 2020). Archer wrote an article about the Madhubani painting, attracting many art enthusiasts worldwide. The government of India recognized the artists for their contribution to art and honoured pioneering Madhubani artists in 1970 (Gosh, 2020). The state government of Bihar declared Madhubani a cultural village due to its contribution to art.

There is a Mithila Chitrakala Sansthan Madhubani training institute under the administrative control of the Department of Art, Culture, and Youth Affairs, Government of Bihar (Mithila Chitrakala Sansthan Madhubani, 2025) established to develop, study, research, record, promote, and coordinate activities in Mithila or Madhubani painting and other folk arts. The Mithila Painting Institute aims to encourage and protect folk cultural traditions (Mithila Chitrakala Sansthan Madhubani, 2025). The art institute offers hostels for both male and female students. The students are both locals, and from outside the state.

2. METHODOLOGY

The snowball sample technique was used to select participants. The researchers chose one of the local Madhubani artists, who referred the researchers to the sample households participating in the study – twenty resident artists were purposefully selected to participate in the semi-structured interviews. There were ten females and ten males. There were also five key informant experts, including the Curator and Director of the Bihar Museum, and three artist-teachers from Mithila Chitrakala Sansthan Training Institute, who were purposefully selected and interviewed. Bihar Museum staff were interviewed because they have a deep knowledge of Madhubani paintings, as they have preserved some of them. Mithila Chitrakala Sansthan Training Institute artist teachers were also purposefully selected because they were involved in training Madhubani artists.

The key questions were: are the Hindi people of the Madhubani area still able to paint for ritual ceremonies and worship gods in the contemporary house designs? And how has architectural transformation impacted the cultural utilisation of space?

The field visit also included the observations of the Madhubani paintings exhibited at the Bihar Museum and the work done by student artists from Mithila Chitrakala Sansthan training institutes, as well as by mentees mentored by resident artists.

During the observation, the pictures were also taken and used for illustration purposes in the forthcoming sections. Some of the images presented in this paper were requested from the Bihar Museum in India, and have been acknowledged as such. Other secondary data were published from websites, books, policy documents, and journal articles.

3. RESULTS: THE ARCHITECTURAL TRANSFORMATION AND IMPACT OF THE CULTURAL UTILISATION OF SPACE

Regarding the architectural transformation in Madhubani, northern Bihar, India, kutcha houses no longer dominate the areas; now, pucca houses are present. Kutcha houses were built using mud walls (Fig. 8). The change from kutcha to pucca houses is attributed to what is happening globally, where migration, urbanization, modernisation, and economic status have enabled the adaptation of different architectural styles. As people travel, they import architectural styles from other areas, or, as they can afford, they can choose any building material they want. Figure 7 illustrates a solid brick, mortar, stone, cement, and concrete house called a pucca house.

Khosla (1983) also argues that the rural areas of India were once dominated by kutcha houses when the country was experiencing an increase in population alongside poverty, flood events, and the need for houses. There were discussions about whether the Indian government should provide pucca houses or continue constructing kutcha houses (Khosla, 1983). Baker, a famous architect, saw no need to give rural people kutcha houses; he then introduced a house structure with a strong and thick wall made of lime mortar, which was then adopted by the government (Khosla, 1983). Again, in terms of architectural transformation, the houses are now single or double-storeyed, with or without a courtyard.



Fig. 3 – An illustration of a pucca house (Source: Authors, 2024).

Traditionally, the Madhubani paintings were initially crafted on the mud walls and on the floor. An example of the kutchha (mud) house can be seen in Figure 4 and displays a Madhubani painting.



Fig. 4 – An illustration of the kutchha house with Madhubani painting (Source: Authors, 2024).

The interest of the current study is to understand how this architectural transformation, the move from kutchha to pucca houses, has impacted Madhubani traditional painting. The respondents were then asked whether they can still paint for ritual ceremonies and worship gods in contemporary house, and how has architectural transformation impacted the cultural utilisation of space.

Figures 3 and 4 show that kutchha and pucca house structures are present in the Madhubani area. In both structures, Madhubani paintings are still used for ritual purposes and the worship of the gods.

A respondent said that it was vital for them to continue painting even if the building structures were pucca houses, because it is part of their culture, which their parents taught them.



Fig. 5 – Pucca house with Kohbar traditional Madhubani wedding painting (Source: Authors, 2024).



Fig. 6 – Kohbar traditional Madhubani (Source: Bihar Museum, 2024).

Figure 5 depicts a pucca house with a Kohbar Madhubani painting design. This art design is often drawn in the bedroom and used by the bride and groom at a wedding. It is similar to the picture in Figure 6; the difference is that Figure 5 is smaller and drawn in the actual bedroom.

Figure 6 illustrates Kohbar, but the photo is preserved at the Bihar Museum. The Bihar Museum Curator and two artist teachers from the Mithila Chitrakala Sansthan Training Institute explained the importance of the Kohbar drawings. The traditional wedding painting is believed to bring blessings, fertility, and prosperity to the new bride and groom.

Figure 7 shows a pucca courtyard's wall and floor decorated by one of the local artists in the Madhubani area. The respondent claims that they were preparing for the upcoming traditional wedding ceremony.



Fig. 7 – A courtyard wall decorated for an upcoming wedding ceremony (Source: Authors, 2024).

In Figure 7, one can see the house wall and floor decoration. Another decorated pucca house, shown in Figure 8, has a courtyard and the floor painting, which fades as it was drawn using rice paste and often vanishes over time. The painting was also done for a wedding celebration.



Fig. 8 – Decorated wall and floor decoration (Source: Authors, 2024).

Figure 9 shows another pucca house decoration, and the participants said the house was used to perform a *puja* ceremony.



Fig. 9 – Decoration on the outside of the house used for the *puja* ceremony (Source: Authors, 2024).



Fig. 10 – Madhubani painting used for worshipping gods. Source: Jaweed, Priyadarshi, and Prabhakar, 2024.

Figure 9 showcases the decorations that manifest the respect given to the deity and god in the temple room of the household. The temple rooms in these houses have photos and idols of the deity that the members of the household worship.

Another pucca house had a painting used for worshipping the gods, as depicted in Fig. 10. The house is a double-storey with a courtyard on the upper floor. The Figure 10 painting holds cultural significance and is painted on the upper courtyard of one of the local artists' homes. The artist lovingly recreated this unique piece for their household temple, which now serves as a focal point for their spiritual practices. The respondent argued that the painting was a gift to his wife. The painting showcases

the god Ardhnarishwara, a form of the Hindu deity Shiva combined with his wife, Parvati. The god Ganesha, son of Shiva and Parvati, is also pictured in the painting.

All respondents pointed out that they could still paint on a kutchha or pucca house; the only change noted was the painting material and technique. Nowadays, house wall paintings mainly use artificial and acrylic colours, whereas back then, they used natural pigments from plants or animal dung, and rice paste for the floors. Before painting, they used cow dung as the house wall base, but now, they can use any colour. As shown in the previous Fig.10, green is also used as a base for their painting. In addition, Figure 11 shows a kutchha house with a Madhubani painting, and blue is used as the base colour.



Fig. 11 – Kutchha house with Madhubani painting (Source: Authors, 2024).

Figure 12 is a preserved photo from the Mithila Chitrakala Sansthan Training Institute, which shows a Madhubani painting on a mud wall where they used animal dung, as was done in the past.



Fig. 12 – Madhubani painting on mud wall with animal dung as base.
Source: Mithila Chitrakala Sansthan training, 2024.

Resident artists and teachers from the Mithila Chitrakala Sansthan Training Institute felt that transitioning from kutcha to pucca houses was not challenging in painting art because they love exploring Madhubani paintings on different surfaces. This is alluded to by painters using various means, such as upholstery, tableware, canvas, papers, bags, sarees, pots, dishes, fans, and other interior decorative elements. However, the participants were happier to paint the pucca house, rather than the kutcha house because paintings on a mud surface fade over time as the house gets wet in rainy seasons or when there are floods. The kutcha house requires frequent repainting, whereas the paint lasts longer in pucca houses. The painters appreciate the pucca house more than the kutcha houses because the paint lasts longer.

As stated earlier, there are kutcha houses in the Madhubani area; there are three households with kutcha houses that were part of the research sample. The participants from these households made it clear that they also want to own pucca houses; it's just that they cannot afford them at present. They do not see having a pucca house as threatening their cultural practices. This is a complex issue as there are trade-offs between modernizing and preserving cultural heritage.

All the participants appreciated the pucca house and pointed out that everyone is building one. Still, the challenge is that when there is an earthquake, there are more chances of surviving as building materials are less likely to kill them. During an earthquake in 1934 in the Madhubani area, people living in kutcha houses had a higher rate of survival than those living in pucca houses. Madhubani is close to Nepal, which is prone to earthquakes, so the area is also likely to be impacted by the magnitude of the disasters (Arya, 2013).

As the living spaces transform, the cultural practice of painting for the worshipping of gods and ritual ceremonies endures. Cultural practices represent shared cultural values, bonds, history, and the sense of identity and continuity of a particular society inherited from the past generation, which need to be maintained by the current generation to benefit future generations (Mekonnen *et al.*, 2022). Preserving cultural practices aligns with the international Sustainable Development Goals (SDGs). SDG 11.4 addresses the need to protect and preserve cultural heritage, which is valued for its "historical, sociological and anthropological" importance to a particular society (Dlongolo *et al.*, 2024: 48). One participant also alluded to the need to preserve the culture and argued that the State Government of Bihar and the Union Government of India ensure the preservation and maintenance of this cultural practice. The artists practicing Madhubani painting are given state awards and *Padma* awards (India's highest civilian honours) to ensure that the culture is kept alive and the art form is continued.

4. DISCUSSION AND CONCLUSION

The *habitus* concept was used to understand how people from the Madhubani area of North Bihar responded to change, focusing on the impacts that architectural transformation has on the cultural utilisation of space. The *habitus* (norms, values, dispositions, and practices) of Hindi people in practicing the traditional Madhubani painting on house walls and floors continues despite architectural changes. Studies have shown that change can lead to the adaptation, modification, and loss of one's *habitus*. Others can resist adapting to new norms, values, dispositions, and practices (Bourdieu *et al.*, 2000; Navarro, 2006), while others still will have the elements of the new and old *habitus* (Bourdieu *et al.*, 2000; Navarro, 2006).

Can the Hindi people of the Madhubani area still paint for ritual ceremonies and worship gods? And how do they adapt or respond to architectural change? The study reveals they can still paint for ritual ceremonies and worship gods in a pucca house. They still do Kohbar painting, decorate the courtyard for a wedding ceremony, decorate a house where they perform *puja*, and have a painting of their god, with a reference to the god Ardhnarishwara. All these paintings are an important part of their Hindu religion. The Madhubani people adapted to the changing architecture, and people preferred to

build pucca houses than kutcha houses. They have adapted their cultural utilisation of the space of Madhubani painting in pucca houses. The study reveals that the people in the Madhubani area are not concerned about architectural transformation, because they can still paint house walls and floors for ritual ceremonies and the worshipping of gods.

The study reveals that the only change that has happened concerns the painting techniques and the materials used when creating Madhubani paintings. People no longer use colours derived from natural pigments obtained from plants, animal dung, and rice paste; instead, they use artificial and acrylic colours. Furthermore, they no longer use cow dung as the house wall base; now, they can use any colour they wish.

The participants did not show any resistance to change in the living spaces. Those who did not have pucca houses are not against pucca houses or have strong ties with kutcha houses; it was just that they did not have the means to build one. They continue to have the presence of Madhubani paintings for ritual ceremonies and the worshipping of gods in pucca houses. The people have also modified their traditional Madhubani painting so that it is not limited to the living space, and obtain different products to meet livelihood strategies. Madhubani painting has also extended into paintings about daily experiences and has been translated into canvas, paper, clothing, and bags.

The findings of the current study on Madhubani painting in Bihar draw a strong parallel with the study conducted in South Africa, which revealed that the cultural utilisation of space remains the same in Mbhashe, a local municipality in South Africa (Ndude and Memela, 2024). The only difference is that the people of the Madhubani area in North Bihar, India, do not resist performing cultural practices in pucca houses. They prefer to practice their cultural belief of drawing Madhubani paintings on pucca houses rather than kutcha houses because the paint on the pucca house lasts longer. In contrast, in a kutcha house, paint fades away during the rainy season. This means that the Madhubani people can quickly adapt their cultural practices to contemporary architecture. The Madhubani people do not have strong ties to the Kutcha house.

The only concern people of the Madhubani area have regarding pucca houses is the sustainability of household structures after a natural disaster (earthquake). They were primarily concerned about their safety, as when the pucca houses are impacted, it can result in people being injured. Therefore, there was little concern about the cultural Madhubani painting on pucca houses.

Future research could explore the demographic dynamics of the artist, focusing on the gendered nature of Madhubani paintings and the impacts of commercializing Madhubani paintings.

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