Kolam Textile Artwork:

Examining the Impact of Handmade Kolam Textile Artwork on the Viewer's Wellbeing.

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Abstract

This research explores how Kolam textile art impacts the viewer's wellbeing when displayed in various settings like healthcare and public spaces. The transition of an ephemeral, Indian traditional, decorative art called Kolam to a permanent, contemporary artwork, appealing to a variety of Western audiences is investigated in this research. The study also justifies why and how Kolam patterns are used as a visual aid for wellbeing in various spaces. Apart from Kolam, wellbeing elements chosen from the visual arts and textile arts are also examined individually to combine and translate into a Kolam textile artwork. For the active research, a final model of a handmade Kolam textile artwork and a digital version of the same are displayed side by side in a diverse range of settings to reach a wide variety of audiences. This thesis choses a qualitative methodology of content analysis of the viewers' responses through questionnaires.

Keywords: Textile art, Public art, Kolams, Chromotherapy colours, Art-Based Research.

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Chapter 1-Introduction

1.1 Research background

Kolams have always been a significant part of the researcher's life, as drawing rice flour designs in front of their house in India was a daily practice. The strong type of visual communication that Kolams offer has long attracted and intrigued the author. At the break of dawn, Kolams are drawn in the threshold of Hindu homes. The objective of Kolams, according to authors Zahra and Pinky (2015), is to beautify and bring good fortune. Both individuals who make them and those who walk over them are considered to receive blessings. As a result, people visiting relatives or walking along the street intentionally go through the Kolams, which are regenerated during the day, making them an ephemeral art form. Design representations may also differ because they reflect regional conventions, traditions and rituals that are unique to each zone, according to the writers. It is traditionally carried out by the female members of the household, state authors Zahra and Pinky (2015).

Since childhood, the researcher's spiritual and aesthetic encounters with Kolams have piqued her interest in learning more about the artform and experimenting with various techniques to transform the ephemeral art into permanent art, as well as studying its impact on a wide range of audiences. Moreover, working as a textile designer for five years, the researcher's experiments with various materials in the past, encouraged her to consider textiles as a medium of art making for its flexibility, easily manipulation and handling.

1.2 Aims and Objectives

Aims:

- To analyse the impact of therapeutic Kolam textile artwork on the viewer's wellbeing.
- To recognise the importance of handcrafted textile art as a means for generating deeper ties between people, materials, and processes.

Objectives:

- To conduct a literature and practice review on the arts in healthcare and public settings.

- Create one handmade textile art piece and one digital replica to demonstrate the benefits of either one or both in public/healthcare settings.
- Research perceptions of colour and pattern to determine the best arrangement for the textile art piece.
- Collate viewer responses to the textile art piece via questionnaires and online interviews.
- To examine the relationship of textile art with the visual participatory research process.

1.3 Thesis structure

Chapter 2 is the literature review and begins with a discussion of the benefits of visual arts in general. Following this discussion, a variety of topics focusing on the significance of art for wellbeing in healthcare and public settings are examined, succeeded by a study about textile and textile art's contribution to wellness. This follows with the investigation of how and why the Kolam and chromotherapy colours aided for visual wellbeing.

Chapters 3 and 4 identified and explained the methodology and strategies used for this research. It starts with a more in-depth look at fair assessment, including why and how it was used in this research. Following that, ethical concerns are examined before the artwork-making process is explained. The argument for employing qualitative data collection methods is also discussed in this chapter. Data analysis follows the planning, procedure, and execution of the display set up for active study. It finishes with a discussion of the effectiveness of the design and tactics used.

Chapters 5 and 6 outline the primary outcomes and their analysis, in the research findings and discussions chapters respectively. These primary findings are from the survey questionnaires carried out as part of the research.

Chapter 7 concludes the research study by providing a summary of the key research findings. It also presents an evaluation of the limitations of this research.

1.4 The impact of Covid-19

Since the start of this research, the world had been hit by the Covid-19 pandemic that had affected everyone on the planet. All sectors were impacted, particularly the healthcare sector, and lockdowns were in place to prevent the spread of infection. The researcher had intended to focus on healthcare for the active research, but due to inaccessibility to hospitals, care homes, or clinics,

this was carried out in other public locations. Fortunately, during lockdown, the researcher was able to accomplish the primary research of planning, developing prototype artwork with available resources, and enquiring about active research sites. The lockdown had eased marginally for active research during the months of October/November 2021, and the pandemic had a partial impact on the completion of this study.

Chapter 2- Literature Review

2.1 Introduction

According to Bolton & Firm (2008), visual art is a technique of communicating and responding to visuals, with or without words, and rather than being remembered verbally, memories and events are frequently retained in the mind as images. Nonverbally discovering and articulating them can be incredibly helpful. Asserting the importance of art, Bolton and Firm (2008) quote that:

> The arts provide invaluable entry points into the diversity, particularity and commonality of grief, dying, death and loss. The arts invite us to uncover, express, revisit and appreciate not only others' stories, but our own as well. In every one of the arts, grief is not pathologic, but part of the natural life cycle. The simple technique of visual study has the power to heal to document and affirm where one is in the healing process. To let it be. The great power of the arts is to activate, renovate and transform. Indeed, the arts – as the process of grief – can thaw what trauma and suffering freezes, or at least can help us better appreciate and endure the sorrows as well as the joys of life. (Bolton, 2008, p. 56)

The contents of this chapter:

- Focuses on the value of art for wellbeing in healthcare and public contexts, followed by an examination of textile and textile art's contribution to wellness.
- Highlights the importance of Kolams as a primary element for investigating textile art.
- Aids in gaining a better understanding of how and why various researchers have used visual art and textile-art based methods, to study the impact on participants' mental health.
- Provides an assessment of the research's gaps in effectiveness.
- Clarifies why, visual art, and textile art are merged as a textile artwork for the purposes of active research for this paper.

2.2 Contribution of arts for visual wellbeing

This study investigates the relationship between visual art, design, and wellness, as well as the effectiveness of this union in enhancing the lives of individuals who are exposed to it. The goal was to collect and generate enough data for an educational and experiential project that combined art and design with health and wellness.

In this paragraph, the researcher attempts to understand visual well-being. Visual wellbeing, according to Gallagher et al. (2011), is the state of feeling healthy, joyous, and content, as well as detecting vibrancy and abundance, as exhibited specifically in one's experience of surrounding

through the visual sense. Gallagher et al. (2011) go on to explain that it relates to a type of "pleasurable looking" that is distinct from, and so capable of accounting for, the looking associated with visual pleasure. By analysing the case studies in their study, the authors suggest two main benefits that a concept of visual wellbeing provides to both rhetoric scholars and visual artefact designers. Firstly, the characteristics of energeia and eudaimonia were studied and derived from multiple sources by Gallagher et al. (2011).

Enargeia, or vividness, is defined by Gallagher et al. (2011) as that which-

- Brings something that isn't there to the attention of the eyes and mind.
- Visual description of experience that is complete, thorough, dramatic, and conveys invisible meaning through visual depiction.
- Persuasion ability in relation to ideas.
- It evokes a sensation of awe.

Gallagher et al. (2011) describe characteristics of Eudaimonia or Wellbeing as follows:

- A manifestation of goodness enriching activities that provide people who live in groups a sense of life.
- Expression of firmly held ideals on a personal level.
- Fulfilment.
- A favourable environment for human flourishing culturally rooted from the start.
- It emphasizes meanings and self-awareness.

Gallagher et al. (2011) examined a few artworks for their research based on the above components of enargeia and eudaimonia as outlined in the structure evolved, providing a distinguishable requirement for analysing and assessing artefacts and design objects, such as Goldsworthy's artwork as portrayed in the film and Hong Kong's public art sculptures. Rather than universalistic aesthetic standards or the body/self-elucidate Gallagher et al. (2011), these criteria recognise the centrality of culturally and socially grounded meanings and self-realization to human existence.

According to Gallagher et al. (2011), the visual wellbeing hypothesis, as well as the elements of enargeia and eudemonia as described and applied in their studies, provided designers with a new set of tools to aid them in the process of evaluating, developing, and finally analysing the results

of a design challenge - particularly one rooted in self-realization or culture rather than bodily pleasures. Furthermore, the authors state that one conceivable set of design initiatives that could improve from the visual wellness hypothesis is in hospital settings. Even though Macrae (2005) found that beautiful physical surroundings are critical to a patient's health, there was no guidance available to aid in design decisions. The components of both enargeia and eudemonia might be considered in the research design, as well as in the evaluation following the implementation of findings, when studies were done to formulate these responses.

It is clear from the above research that incorporating characteristics of enargeia and eudemonia would be beneficial for visual wellbeing. Moreover, the gap in the above research guided the researcher to make design decisions for creating artwork incorporating the components of enargeia and eudemonia as it would contribute immensely to the visual wellbeing in both public and healthcare settings.

2.3 Importance of art in healthcare and public spaces

Having reflected on the importance of art for wellbeing, past research was used to assess the impact of its presence in various settings such as hospitals and public spaces. This study will give a deep insight of the impact of art on the viewer in various settings. In this section, the researcher investigates how visual art has been perceived in healthcare and public settings.

2.3.1 Art in healthcare settings

This section explores the importance of art in healthcare and how visual art in healthcare has had an impact on the viewer who could be either the patient or staff. This will help the researcher to examine and evaluate how the final textile artwork could be made and where it could be possibly displayed in a set up.

When examining the importance of art in health care of seriously ill people, including those with HIV/AIDS, the researcher, Kellman (2004), in his paper concluded that:

- The visual arts offer a one-of-a-kind way of eliciting narrative significance and personal meaning from one's most profoundly felt, interior experiences.
- The visual arts allow people to develop a sense of continuity in their lives.
- The visual arts enable people to tell their tales to others.

- Visual arts are a fun and pleasant way to spend time.

This study is a good example for the positive benefits of visual art in a healthcare set up and how visual arts could be effectively engaging. These outcomes helped the researcher to frame questions for the qualitative analysis on various aspects like being comfortable viewing the artwork and engaging with the artwork.

From a psychological standpoint, Leather et al. (2000) highlights the significance and necessity of having art present in the surrounding. Psychologically supportive designs, according to the authors, are ones that project a positive image, such as being perceived as kind and welcome rather than odd and threatening, and hence aid in the generation of positive mood states, such as pleasurable relaxation. Depletion of self-reported stress, elevated prevalence of positive environmental stimulation, risen mental capacity to sequence novel information, shorter post-operative stay, reduced post-operative drug consumption, and possible physiological change were among the benefits discovered in their study. In summary, the authors highlight that the architectural architecture of the hospital environment is demonstrated to have a clear and significant health premium associated to it through artwork displays. In contrast to the patient-based outcomes in healthcare, the authors Leather et al. (2000) show that while the redevelopment programme had no similar positive impacts on staff well-being, this was almost obviously due to the confounding effects of the revitalization programme's changes in the social organisation of work, such as new work styles and the formation of new workgroups.

The above study emphasised the need for the artwork to be benign to the observer. Unsatisfactory results based on the staff participation were identified as a gap from the above research and eventually, this guided the researcher to encourage participation from the staff in healthcare for the current research.

Reynolds and Prior's (2003) study with chronically sick individuals yielded some impressive results, including art filling occupational voids, distracting thoughts of illness, improving flow and creativity, expression of sorrow, optimistic identity, and social networks. Their study was measured for health and wellbeing. Reynolds and Lim (2007) conducted case studies to better understand why some people resort to generating visual art after being diagnosed with cancer and how creative self-expression might help people maintain or rebuild a positive identity. Samoray (2005) through semi-structured interviews with trauma patients, found out that art helped reduce

stress and symptoms of compassion fatigue, increased in healing, well-being, and sense of purpose. A study by Ross et al. (2005) resulted in improved medical outcomes, trends toward reduced depression, and haemodialysis parameters among patients in the haemodialysis unit. For the research, artistic activities were offered, led by artists, and included artwork, crocheting, crafts, seasonal displays, poetry, and playing musical instruments.

All these facts were critical for the researcher to effectively develop and implement the artwork design. Although the preceding reviews were focused on design of spaces, fundamental awareness of human psychology towards art and its elements allowed for a deeper comprehension of the visual stimulus and psychological influence of a positive image to elicit positive ideas. Building a design and artwork based on these key facts would result in a relevant piece of art that would help relieve stress, improve pleasant environment stimulation, increase mental ability to comprehend novel information, and affect psychological change.

2.3.2 Art in public settings

2.3.2.1 Defining the term "public art"

Although public art as art can be found in common public locations, it can take a variety of forms for public audiences and with public objectives and values. Performance art, street furniture, graffiti, murals, and sculpture are all examples of public art that might be temporary or permanent. To describe public art as art for the public or art that is displayed in public settings for everyone to enjoy and experience sounds overly simplistic (Knight, 2008). Consequently, it may be claimed that public art is more than just "art in public," but art with a purpose. Public participation, whether direct or indirect, is essential to the notion of public art. Thus, Cartiere (2010) defines public art by combining one essential criterion and four alternate criteria:

> ...public art is art that exists outside of museums and galleries and must fall into one of the following categories: (1) In a place accessible or visible to the public: in public, (2) Concerned with or affecting the community or individuals: public interest, (3) Maintained for or used by the community or individuals: public place, (4) Paid for by the public: publicly funded. (Cartiere, 2010, p. 15)

Although the current research artwork was not supported by public funding, the above findings on public purposes, helped the researcher realise how displaying art in the public could reflect broader

interests, variety of people and allow engagement at various levels. The above studies also gave an insight of the visibility criteria of the final artwork exhibit at various locations.

2.3.2.2 Public art and public engagement

The concept of art as engagement is central to new genre public art, with the artwork itself having a direct relationship with and impact on people's expressive lives. It is a characteristic of public art that it must balance social and artistic goals. In this regard, being knowledgeable about the display venues was critical to connect with it in an informed and acceptable manner.

Author Zojaji (2020) in his study of three commissioned public artworks in Tehran's Āb-o-Ātash park, took an exploratory approach to contribute to the existing body of knowledge on public art in relation to the public by empirically investigating the influence of three variables: form, site, and content on audience engagement. The first step was to define what constitutes public art. The author then identified the works of public art based on the delineated definition of public art. The audience's interaction with the artworks were then monitored and studied in respect to formal, locational, and content characteristics. According to Zojaji (2020) in terms of public participation, the publicness of public art was a question of communicative aesthetic experience. Depending just on form to evaluate a work of art in a public space reduces it to plop art, mentions Crosbie et al. (2005), which acts as cosmetic décor with no regard for the environment. By doing so, it will miss the public artwork's ability to inspire public participation. It's also worth noting that public art artists tend to reject the idea of public art as decoration, stating instead that they construct urban environments rather than merely placing "things" in them mentions Deutsche (1988). Hence it was important for the researcher of this paper not to reduce the research artwork to a mere decorative plop art, rather ensure it contributes to visual wellbeing however possible, for example, in terms of the elements used and merging with the display location.

The rationale for this is that by allowing for the presence and gathering of the public, the spatial architecture of a public artwork site encouraged encounters with art. For example, public facilities encouraged potential viewers to stay longer at the artwork's location. People, on the other hand, did not remain in settings that lack public amenities, such as parks without shade or benches (Wireman, 2008). However, Zojaji mentions that, simply staying on the site did not guarantee that one would notice or actively connect with the artwork. Even if recognising the artwork was a result of the audience's presence, and lingering because of the spatial design, noticing as a spectatorship

was not a kind of active participation because it kept the audience in the position of responding rather than interacting.

Furthermore, according to Zojaji (2020), public art is created by an artist for placement in a public setting. Urban public space is not intended to contribute to a specific piece of art. The success of spatial design in place-making, rather than the success of public art, is the effective functionality of spatial design in hosting the public who may subsequently choose to engage with the artwork displayed therein. The author believes that basing public art success on spatial design ignores the active function of public art as a public phenomenon and, as a result, blurs the lines between public art and art in public spaces. It would further limit public art to an aesthetic object whose utility, beyond the emotive empiricism or spatial adornment, is mainly reliant on the site. The object-thinking attitude toward art that Crosbie et al. (2005) attributes to plop art is akin to this attitude toward public art.

Highlighting the importance of art not only in the healthcare but other public spaces, Fisher (1996, p. 44) quotes that:

> ...whether an artwork merely occupies a site or expresses the sense of a place, the act of placing or performing a work of creative expression in public space alters how that space is seen, and how audiences see the work; if sufficiently noticed and engaging, it may also alter the ways in which both artist and audience see themselves and their worlds. Public art and public space are inextricably linked.

Public art has been condemned for neglecting to conduct a proper benefit analysis and instead relying on anecdotal evidence that it is a "good thing." This isn't a problem limited to public art. Sharp et al. (2005, p. 1013-1014) believe that "the widespread lack of evaluative metrics in community programmes makes it difficult to establish measures of "good practise," affirm what constitutes a "successful" intervention, or give weight to assertions made regarding public art's social impact." Blackman (2014) took on the task of quantifying excellent practises by conducting an in-depth investigation into how people perceive and relate to public art, as well as how it influences their well-being. The iconic, The Angel of the North, a sculpture by Sir Antony Gormley, was employed as an intervention in the study by the author, Blackman (2014), and its impact on wellness was explored. The goal of this study was to investigate this influence by determining what outcomes were expected, how many were achieved, and why and how they happened. The realistic evaluation method provided a solid framework for identifying outcomes

and judging whether they were met. Even though there was no practical guide literature on using a 'theory of change' interview as a technique, the author's utilisation of in-depth interviews with stakeholders was regarded effective. Participants were able to build narratives about the past and present, as well as reflect on the context and mechanisms involved in the Angel's formation, thanks to the research interviews. Identifying stakeholders' narratives of both expected and actual outcomes, on the other hand, was employed in Blackman's research to reflect on the success of their own initial theories of change, as well as to investigate unforeseen and unmaterialized consequences, methodology, and context.

Narrowing down the author's investigations on public art for this paper, the researcher further investigated the impact of textile art in healthcare settings. Karina Thompson's project with a variety of people at the Cancer Centre, University Hospital Birmingham, was a stark example of how textile art could involve everybody and hence contribute to their wellbeing.

Figure 2.1 Thompson's finished piece at the Cancer Centre, University Hospital Birmingham (karinathompson.co.uk)

Thompson’s artwork involved people awaiting outpatient clinic or treatment appointments; patients on surgical or teenage cancer wards; bone marrow transplant patients as well as the clinical, technical and administrative staff. She worked extensively with the arts manager and a volunteer, and people were approached to make a simple fabric cut-out of their hand. This was heat bonded to other fabric. Thompson developed a series of 'packs' that allowed staff and patients to embroider on to their piece later. The pack included a large envelope so participants could mail their piece back to be included in the final pieces. The number of returned pieces was twice expected resulting in several smaller framed pieces as well as the large-scale piece for the entrance.

Figure 2.2 Samples of few pieces for the Thompson’s final project (karinathompson.co.uk)

At St Bede's Palliative Care Unit, another textile artist, Donna Cheshire, created large-scale pieces for exhibition around the building, encouraging those who were able to assist with the design and fabrication of the artwork. The artist Cheshire mentions in her blog that because the patients were so unwell, it was often necessary to collaborate with family members, or employees would have the opportunity to add colour or stitch to portions for the artist. The triptych seen in figure 2.3 conveys the unit's concept of care and contains a quote from Dame Cicely Saunders, the founder of the hospice movement. People could choose a colour, push a button, and stitch a word as the artist brought her CAD machine into the unit. This project led to her developing a cover for the small notebooks that they distributed to patients to record their "Thoughts and Feelings." The

textile design was digitised and then printed as postcards, which were then attached into the cover of the notebooks.

Figure 2.3 Samples of few pieces for Cheshire's final project (donnacheshiretextiles.com)

Figure 2.4 Four panels at the Quiet Room (donnacheshiretextiles.com)

Working at the Palliative Care Unit (Figure 2.4), according to Cheshire, was eye-opening since the staff were fantastic, patient, loving, and cheerful. Furthermore, the artist claims that among the paintings and projects she spotted dialogue, storytelling, and laughter, and she hoped that the items they created together would continue to provide colour, calmness, and conversation to the unit. This demonstrated how rewarding and enjoyable it was for both staff and patients to create textile art.

It was also interesting to note how the process was inclusive and how the practitioners related the processes and its outcomes to the participants' wellbeing by making public art engaging and meaningful. Even though the studies mentioned above were participatory public engagements, the researcher looked at the approaches and techniques that may be used to make the final Kolam textile artwork effectively involve the public only by viewing. As a result, rather than reducing the end artwork to a plop art, it was necessary for this research's final artwork to be engaging, bearing in mind the locational, formal, and content features to the audience.

The public engagement in this project happened in two ways, running Kolam workshops for the public to gain understanding of Kolam patterns and with the interaction of viewing the final work followed by completing a questionnaire. Throughout the designing and production of the final Kolam textile artwork, the researcher had attempted to achieve the same, mindful of its non-tactility and visual appeal it demanded. For the greatest and most efficient research results, all attempts had been made, to be unique while also engaging and fascinating to the audience, despite the limitations imposed by Covid.

2.4 Influence of textile and textile art on wellbeing.

It was critical to highlight the impact and value of textile and textile art on wellbeing at this point, as well as why the researcher opted to include it in this study.

Textiles is a versatile and adaptable medium that may be used to create any type of artwork or installation, according on the artist's objectives. The exhibition Cloth and Culture Now was a good example. According to Miller (2008), the exhibition brought together 35 artists from several nations to showcase textile artworks that reflected the social, political, and utilitarian history of textiles in the context of altering cultural and traditional traditions. The project investigated the cultural role of cloth in the development of contemporary textile practices that arose from

traditional practice, and it broadened the field of study in this area by exploring the transition from traditional practice to the development of a contemporary language of making, as well as the factors that influenced that development. Miller (2008) further states that the study took a multidisciplinary, clear approach, beginning with a material investigation into the processes of creation to find the cultural context embedded in these activities. Semi-structured interviews with artists from Estonia, Finland, Japan, Latvia, Lithuania, and the United Kingdom were conducted on an individual basis, with the understanding that textiles have traditionally played a central role in each of these countries. Both economically and as a carrier of the narrative of place, and that the contemporary textile artists were using that embedded narrative within the discourse surrounding their practise. Knitting, tapestry, and embroidery were among the several traditional techniques and materials used in the final works, as well as the investigation of new materials and technology. These methods demonstrated the adaptability of a cloth and how it could be readily handled to create a striking pieces of art. The cloth's characteristics were essential when creating the researcher's artwork, it required flexibility when plaiting and manipulating into Kolam patterns. These characteristics would also contribute to the aesthetic qualities/depth of artwork and the efficient construction of the final Kolam textile artwork.

Because cloth was employed as a tactile medium for art therapy or in a traditional craft context, most of the literature evaluation for this section was based on participatory techniques. The researcher may use similar textile art and fabric manipulation methods to produce the appropriate look and feel, which might effectively relate and engage the spectator for the current research's final artwork, thanks to the outcomes and effects of these participatory studies. Although Reynolds (2004), elaborates very systematically with solid evidence about the occupational features and value of textile art in the healthcare, she also highlights its relevance to wellbeing in long term illness through her research due to the following reasons:

- Adults could work on textile art projects without prior knowledge.
- Textile projects enhanced choice, control, and interest.
- Textile artwork was purposeful and future oriented. This gave hope to patients with long term illness.
- This may become a family tradition over time and had great chances of being passed from one generation to another which created a strong bond between family members.

The most notable notion coming from the practise to date, according to Reynolds (2004), was how intricately interwoven textile craft processes were with dialogical tales. According to the author attendees' active participation in textile processes such as stitching, mending, and ironing had frequently triggered memories, leading to narrative, a form of dialogue that also included an exchange of knowledge, of getting to know one another as the stories were recounted, told, and re-told, resulting in a form of discussion that aimed to gain better understanding by becoming aware of one's own opinions and broadening comprehension of one another. The term therapeutic was used in Reynolds (2004) study to denote the positive influence that a given activity could have on a person, not regarding its more clinical implications in art therapy. A variety of textile crafts-specific characteristics had been recognised as having considerable positive effects on individual wellbeing. The most frequently mentioned benefit, according to Reynolds (2004), referred to the repetitive activities of textile craft processes, in which the actions were performed over and again, resulting in automatic movements that are performed without consciousness, such as walking and breathing. Although the current research paper doesn't involve tactile textile activities for the participant, the researcher ensured to employ appropriate textile techniques to give the viewer a visual tactile feel. For instance, patterns and plaiting techniques which were used in this research textile artwork were rhythmic repeating elements, used to achieve a visual balance.

Even though all the studies above emphasised the benefits of interactive textile artforms through art therapy methods, the researcher might gain an understanding of how textile art could be transformed into visual art while still holding meaning for the viewer. The choice of colours in the final artwork to represent various feelings such as contentment, happiness, calmness, and coping with troublesome moods could also be linked to the beneficial consequences of interactive visual textile art.

2.5 Research artwork elements

The artwork for this practice-based research required a great deal of planning and execution, which is detailed in the methodology chapter. The design elements of the textile artwork had to be carefully considered to capture and hold the viewer's attention immediately. It would jeopardise the viewers' enjoyment, connection, and interest if not carefully designed. Keinonen et al. (2013, p. 9) study extends on the idea of designing for wellbeing in this setting and mention that:

> Design, and indeed design for wellbeing, is an integrative and fundamentally cross-disciplinary practice that operates in a complex environment of different and in many cases conflicting values, methods, occupational roles and responsibilities, historical legacies both positive and negative, and societal forums and practices. To understand design, it needs to be seen as a practice that encompasses art, craft, innovation and research.

Design, according to the authors Keinonen et al. (2013), preserves the creative goals of providing purely aesthetic encounters, relies on human ingenuity, and adheres to the practise of displaying that is unique to visual arts. Second, long-standing craft practices, such as a mastery of materials and production methods, a respect for predecessors, the ability to turn ideas into reality, and a passion for high-quality artistry, are key factors in design competence and social purpose. Keinonen et al. (2013) adds to the idea of change by stating that design attempts to initiate change and, as such, must be considered as part of the innovation processes.

The identified factors support the design and thought process that must be considered for this research while performing the artwork to involve as many people as possible. As the researcher will not be present at the exhibition, the artworks must draw attention to themselves. Hence, the design concept, colours, and materials were all crucial. The elements chosen based on the above criteria are discussed below by the researcher.

2.5.1 Kolam making

For active study, the researcher chose Kolam as the key design element for the final textile artwork. This section delves deeper into the meaning of Kolams and why they are relevant to this study. Many traditional crafts, such as Kolams, are under documented beyond the drawings involved, existing mostly in the oral and lived traditions of individuals and groups and necessitating an attentive inquiry into the roots and nature of each practice.

2.5.1.1 Positioning Kolam within this research framework

Kolam making is becoming extinct in recent years due to limited use, urbanisation, modernity, migration, more education, and the fact that it is a time-consuming process. As a result, the researcher decided to revive this deteriorating art (Kolam) as a textile artwork.

Babel & Sachihar (2020) conducted a similar study on Sanjhi motifs/designs that were modified for textile design to revitalise the traditional art. Sanjhi is a rural Rajasthani religious craft that the

researchers turned into a product line by modernising Sanjhi designs on cloth and numerous household and furnishing products. Customers responded enthusiastically to these products, according to the researchers. Babel & Sachihar (2020), usage of Sanjhi themes in textile design was a fresh step in the revival of Sanjhi folk art. The patterns were able to generate a wide range of modifications, resulting in a series of legacy motifs being reimagined as contemporary inventions. As a result, the researchers were convinced that in the textile industry, the adapted design might be employed for product surface enrichment, diversity, and value addition. This form of employment also encouraged people to come up with innovative ideas, which served to improve rural art and craft indirectly.

Figure 2.5 Sanjhi art on paper (isha.sadhguru.org/)

Figure 2.6 Sanjhi paper art adapted as a t-shirt design (etsy.co.uk)

Sarah Zapata, a Peruvian-American fabric artist who works and lives in Brooklyn's Red Hook community, is also deserving of mention. According to the Ogden Museum of Southern Art in the United States, Sarah Zapata's work existed in the intermediate zones between the old and the new, between artisan and fine art, and between South and North America. Her pieces on display at this museum functioned as gateways, looking back and forth in time and demonstrating diversity. Through these works, Zapata explored the tensions between her origins as a modern artist interested in ancient cultures, a Texan living in New York, a queer artist schooled as an Evangelical Christian, a fine artist working in craft mediums, and a Peruvian-American living in the United States. Her work voiced concerns with performative identity, women's work, and the term's presumed meaning.

Zapata quotes her choice of textiles in an interview, ugly colours and fetishizing yarn (M.Rajagopal, https://pinupmagazine.org) as:

> Working with textiles, I'm interested in exploring the Familiar, like capital F, with this material that everyone has a relationship to. Whether it's through a grandma, mother, or friend, everyone's encountered yarn and some of these pastimes and techniques associated with it. But that relationship to the material can change depending upon scale or whether it's being used as an architectural component. I've really been thinking about how textiles can direct the body and be activated by them, sometimes with physical touch and other times not, by directing pathways or circular movements through space and building these literal blockades people must walk around. Thinking about how colour can play into these ideas, red and green are just so foul. That's what initially attracted me to using them for this installation. (M.Rajagopal, https://pinupmagazine.org)

Figure 2.7 Sarah Zapata, A little domestic waste IV, 2017, Natural and synthetic fibre, hand-woven fabric, steel, cement, coiled rope, Collection of the artist, Courtesy of Deli Gallery (ogdenmuseum.org/sarahzapata/)

The researcher found it fascinating to see how artists from all over the world adapted and represented their traditional and cultural identities through commercial textile design or textile fine art. This study also assisted the researcher in comprehending various traditional approaches in the

creation of the final handmade artwork, which was also an expression of the investigator's own identity. An attempt to reinstate a dying art (Kolam) by contemporizing it and still maintaining its traditional aesthetics by giving it a modern-day appeal through textile medium was also one of the researcher’s ambitions.

2.5.1.2 Kolam as an infographic

The meaning of as Chacko (2016) says it is a “guise”, drawn on the doorstep of a house which is a floor drawing prepared everywhere which can range from simple to complex patterns. Every Hindu Tamil home has Kolam making as a tradition which has been passed down through generations through the women of the house. Culture refers to a person's way of life and is necessary for all our activities (Satpathy, 2015). Tradition is a practice or behaviour that is passed down from one generation to the next within a group or community (Satpathy, 2015). Every morning, the house's threshold is adorned with beautifully drawn Kolams. This is a distinctive ritual practised by Tamil ladies in every household worldwide. Kolam is an ornate earthen graffiti created by Hindu women in Tamil Nadu and painted in front of the gates of homes, yards, temples, and sanctuaries (Figure 2.1).

Kolams date back to 2500 B.C. and the Indus culture, according to Zahra and Pinky (2015). Elucidating ore on Kolams, the authors Zahra and Pinky (2015) further mention that they come in a variety of styles and are passed down through the generations to women and girls. These painters start by drawing a simple pattern on the floor with white dots, then link the dots with flour according to their imagined plot. In India, Kolams come in a variety of styles and are known by several names such as Rangoli, Mandana, Chowk purna, Alpana, Aripana, and Muggu in different locations add Zahra and Pinky (2015).

Predefined Kolam designs have unique names and are based on secular, magical, metaphysical, spiritual, or philosophical concepts. In Hinduism, Kolam is regarded holy because it welcomes Lakshmi, the goddess of prosperity and fortune, and drives away negative forces mentions Kilambi (1985). They are painted in front of the houses on purpose so that those who want to enter the house tread on them. People want the passer-by to walk on them because Hinduism believes they bestow blessings on the household. They are sometimes painted on the pavement by wealthy families to encourage more people to stroll. They are decorated with edible flours, on the other

hand, so that animals and birds can eat them. As a result, all Kolams fade before dusk and are repeated the next morning. Kilambi (1985) further mentions these paintings are also considered symbolic of prosperity, peace, and friendliness between family members, therefore none of these artists get weary of repeating them.

Although Kolams are traditionally done, and women do not advertise their work, they attract many people by chance during the day. Viewers are obliged to intervene and manipulate them due to their immense effect on the spectator, which is fuelled by their spiritual and psychological backgrounds.

Figure 2.7 Rice Kolam in the threshold of a Tamil Nadu Hindu home. (Geetasubramanium, 2016)

"The viewers of these paintings, like in interactive art, encounter a layout and installation which invites him inside, not as a static but as an active viewer" (Rahbarnia & Kheiry, 2013, p. 92). "The nature of the work of art is built on this basis: being experienced revolutionizes the one who is going through the experience. The work of art itself affects. The issue of experience in art is not the subjectivity of the one who is experiencing it, but is the work itself" (Etehad, 2007, p. 286).

This compelling attractiveness of Kolam is of great importance to incorporate it for this research artwork.

These are fascinating aspects of the Kolam which were considered during the planning process of the type and size of Kolam for the final artwork.

2.5.1.3 Kolam as a unique traditional practice

Kolam patterns serve as a conduit for the transmission of cultural and religious ideas from one generation to the next based on a shared spiritual plane. As a result, the researcher focused a large portion of his research on this topic. It's important to keep in mind that illustration, narration, and metaphor are all intertwined. These elements may differ depending on a variety of factors such as culture, tradition, and belief systems. The variances in the outcome are the result of these three important elements that interact with the person's characteristics. The floor art, which is commonly created in front of the dwelling, is a female creative expression. This eloquent art form, which is nothing more than the spiritual distribution of colours, allows women to express their creativity in a limited space, allowing their expressive creative language to flourish and evolve without limitations.

According to Chacko (2016), space and floor art are inextricably linked. The drawings on the floor can take up ownership of the area. Chacko (2016) further continues that the women receive a sense of owning that space and the entire house inhabited by the floor design via the practise of these sacred patterns and decorations. Similarly, artwork containing the Kolam pattern will have the power to occupy whatever space it is presented in. This quality is seen very important by the researcher as the final artwork will be displayed in varied settings.

2.5.1.4 Kolam as embodiment of rhythms.

As patterns can imply physical manifestation and are an expression of rhythms, Lefebvre (2005) suggests that rhythms can be used as a disciplining tool. In a similar way, studying the practise can be viewed as a strategy to maintain a gendered continuity and avoid disruption by strengthening a balanced state between a variety of rhythms. Lefebvre (2005) further mentions through repeating movements, women understand and embrace the flow, which is their ethically correct way of engaging with the seasons and lives. However, each lady develops her own

artistic rhythm because of repetition. Nobody's the same as anyone else's, just like handwriting. It doesn't appear the same from day to day, either. Some women purposefully push limits, while others primarily adhere to them. Although the handmade artwork, unlike patterns, cannot be altered every day, it will be displayed as a best example of the diversity of rhythms, thereby displaying a sense of discipline and orderliness, and thus providing a guided viewing approach for the participant. This flexibility allowed the researcher to experiment with various types and sizes of Kolam patterns.

'The knowers (full participants) come in a range of types, from clones to heretics' quote Lave and Wenger (2003, p. 116). The authors stress the relevance of master-apprentice mutuality in the development of a practise as a critical component of the learning process. More than simply the apprentice is affected by the operation. Despite the power dynamics in the collaboration, both actors are active learners. Uncertainty and changing strategies are enabled through the implementation of known routines, improvisations, and shifting meanings. As a result, both the practitioners and the activity, as Lave and Wenger (2003) point out, are mutually constitutive. New materials and values are constantly incorporated into the practise, which are negotiated both inside and between the performers as well as in reference to the greater community. This approach allows the researcher to investigate a pattern that is best suited for the purpose of this research textile artwork, which can be created by experimenting with various textile manipulation methods.

There is a strong relation between the physical image drawn on the floor, and what people describe, and the inner meaning behind every Kolam, (Chako, 2016). One must travel through all the three stages to reach the complete understanding of any Kolam. The art is enriched when it is not bound by any barriers and when it is embraced by everyone. The practice of is one such art which is in constant evolvement, and which is embraced by others, especially Christians. The art of today has no boundaries. It has however become a unifying factor cutting across the boundaries, mentions Chako (2016). It is evident from this study that there is a universal appeal to Kolams and it is a form which can be easily appreciated and could involve any viewer.

2.5.1.5 Kolam as a training tool for brain recognition function and stretching.

It is a remarkably interesting find that, Kolam patterns have been used for brain recognition function and stretching. They have either been transformed to educational toys or used as a visual material to aid in the same which have been extensively discussed in this section.

Nagata and Thamburaj (2006) studied the mathematical and algorithmic aspects of Kolam patterns and invented two educational toys namely, Universal Cube (UKC/PsyKolo) and tactile sheets, one of which will be discussed here. Although the educational toys which were developed in this study were tactile in nature, it provided an insight for the researcher about the methods and methodologies involved. This insight guided the researcher to employ specific methods for an enhanced viewership.

The Universal Cube (UKC), also known as PsyKolo, was a designed educational toy created by digitising traditional religious Indian patterns, as well as European Celtic patterns and African Sona patterns. was easier to enjoy for the visually impaired and blind. According to Nagata and Thamburaj (2006), patterns have a lot of mathematical and geometrical aspects and follow mathematical principles. The authors explain the UKC/PsyKolo as a set of wooden cubes with primitive patterns on each side, as well as certain gadgets that allow the cubes to be joined and turned in a variety of ways to create a vast range of pattern forms. The lines and dots in the ground were printed and embossed with colourful and tactile material in a particular layout for persons with visual and other limitations to universally recognise.

Nagata & Thamburaj (2006) developed KoMa, a real-world educational tool based on those simple tiles (acronym for Magic, later renamed PsyKolo for Psychological, meaning cube in Japanese). PsyKolo was made from a set of wooden blocks (each measuring 4.5 cm) with basic primitive shapes embossed on each of the cube's six sides (Figure 2.4) and accessible embossed lines on Microcapsule paper. Many cubes could be joined side by side to construct linear or planar structures using a small magnetic element buried in each of the cube's six sides. The cubes can then be rotated into various symmetric closed curves and patterns by rotating them to a desired position. They could be arranged in Matrix formations of N x M rectangle shaped patterns (for

example, 3 x 3 cubes, figure 4) or in any other arrangement. New patterns could be created by rotating the cubes.

Although this toy was developed to enhance brain functions in the visually impaired, the researcher found relevance to the fact that patterns could be broken down to parts and shuffled to form numerous other patterns by adhering to the fundamental design system of the pattern.

Figure 2.8 Universal Cube

(Nagata ,2015, p. 29)

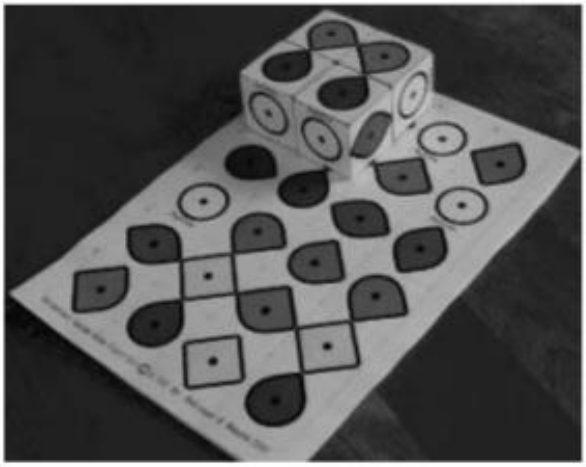


Figure 2.9 Kolam pattern formation

(Nagata ,2015, p. 29)

Nagata (2015) investigates another example of employing Kolams to train the brain's recognition function and stretching when computer graphics-creators of loop patterns were to be employed as a tool for training the brain's e-recognition function and stretching. The Kolam in figure 2.6 was employed as a training chart for brain operations such as tracing and maintaining sight to a line, memorising the position once traced, stretching eye-muscle, and avoiding vertigoes-dizziness. According to the study, tracing a moving line edge in a huge animation also causes eye-muscle stretching. Nagata (2015) used Kolams as puzzles in her research, which helped with recognition function training. Figure 2.7 (a) is the puzzle question asking the viewer to join the circles to form a continuously looped pattern. Figure 2.7 (b), (c) are different answer approaches.

This puzzle study helped the researcher immensely in the initial sketching and designing process by helping to investigate various design approaches. Even though in the above study, patterns were used to specifically train recognition function of brain and stretching in the form of charts and

puzzles, it is one of the most important effects the researcher has considered for using as the main design element for this research artwork.

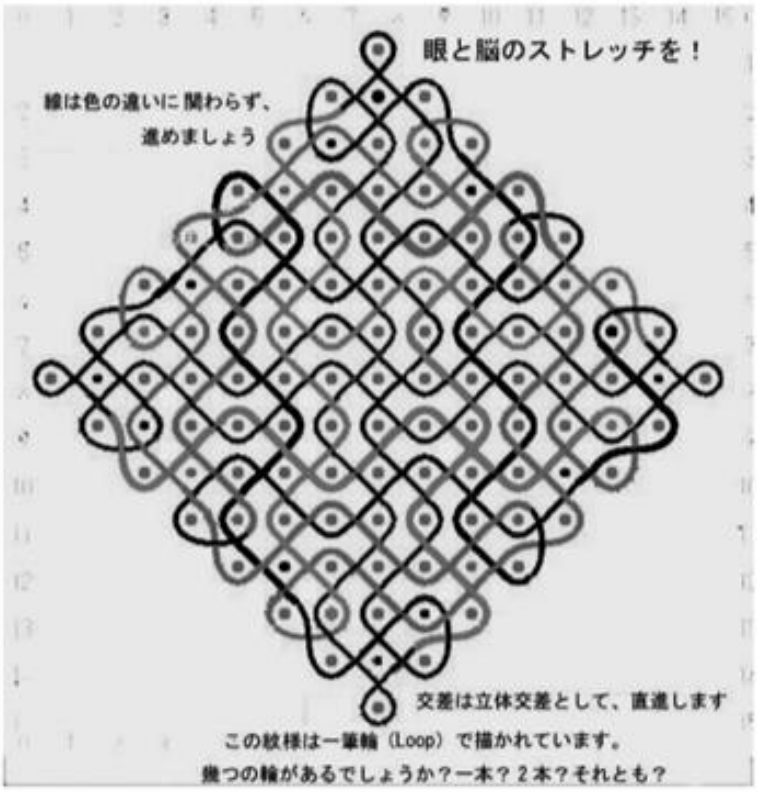
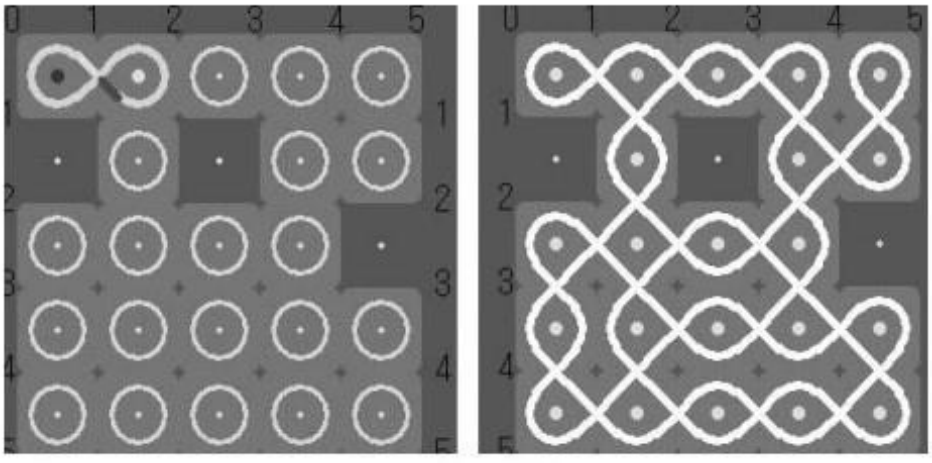
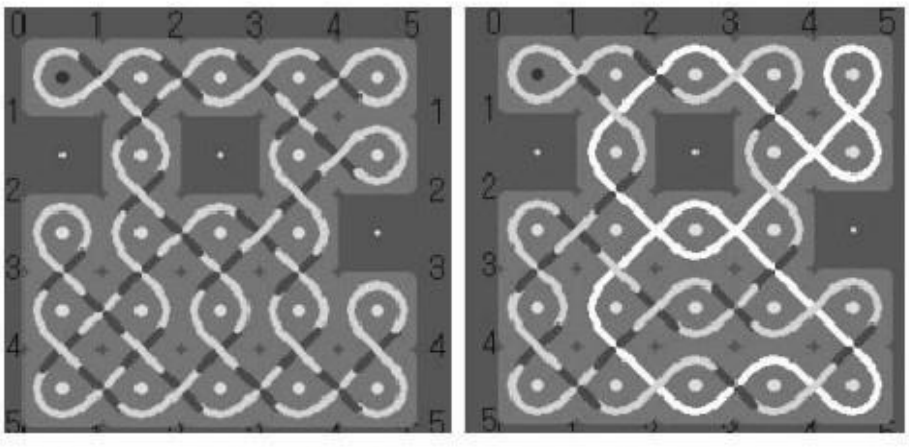


Figure 2.10 Kolam used as chart for training brain activities and stretch eye muscles (Nagata 2015, p. 30)



(a) (b)



(c)

Figure 2.11 Kolam puzzle question(a), Answer possibilities(b), (Nagata 2015, p. 30)

To summarise on why Kolams were chosen as the main element for the final research artwork was because Kolams are:

- a new subject of art to the western audience
- unique art from
- forgiving and flexible art with indefinite ability in scaling its size and form
- has a globally unifying appeal
- visually vibrant and appealing
- power to occupy whatever space it is presented in
- act as a training tool for brain recognition function and stretching.

2.5.1.6 Kolam as an aid for wellbeing

Based on the findings of the study and personal observations, the researcher concludes that Kolams are a fun method to bring people together and start discussions. Although there are numerous physical benefits to drawing Kolams, such as improved hand-mind coordination, a sharper brain from doing so daily, grounding, balancing, and kinesthetic awareness of the body as a pendulum, Kolams also contribute to mental wellbeing by encouraging tolerance and patience. This daily routine clears away past negativity, reinforces the quality of non-attachment, and heightens awareness of one's connection to the body and the soil. It is an inexpensive way to take care of

one's mental health, hence contributing significantly to the artist's well-being. While the focus to this project was to build a visual connection with the audience and to benefit the viewer's mental health, the physical enhancements described above were as significant to the researcher as a participant while creating the final Kolam artwork.

2.5.1.7 Generating various Kolam patterns

Figure 2.8 is an example of the diverse types of Kolams. Previous studies have proved that pattern generation can be done using various approaches, which will be detailed below. Interestingly, most of these studies were based on tessellated or loop Kolams. Studying the generation of patterns helped the researcher gain an insight into the techniques and build patterns for the final artwork. This section discusses the mathematical aspects of a pattern and how to generate larger Kolams.

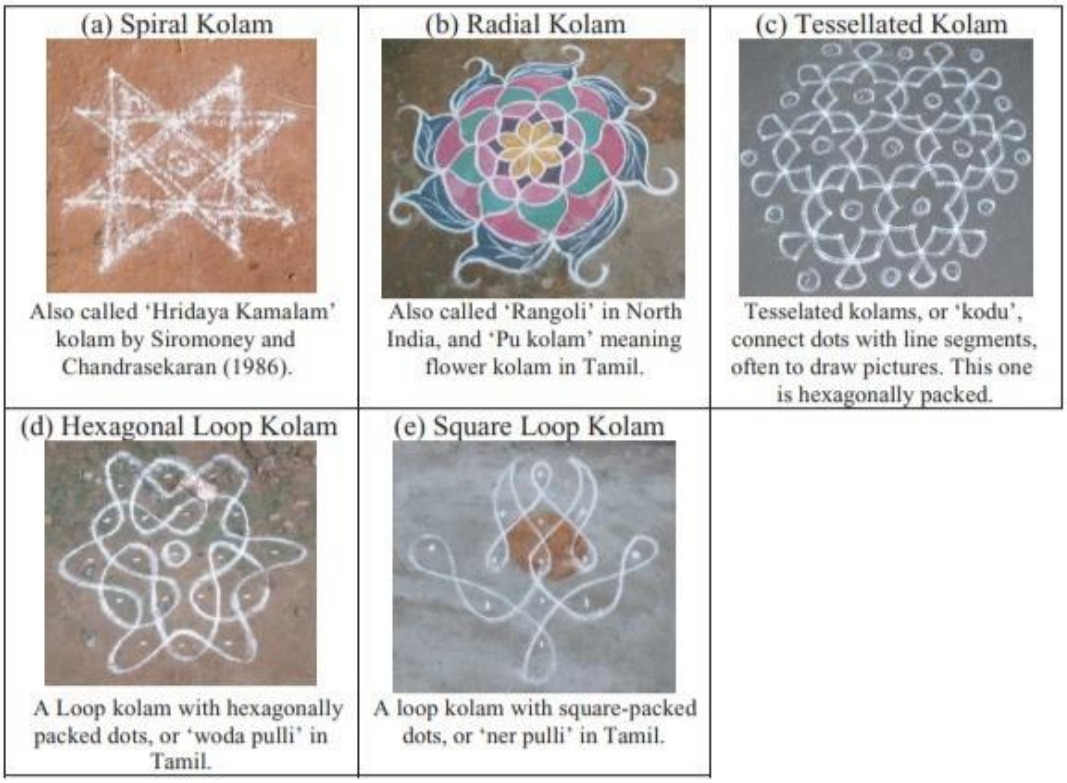


Figure 2.12 Different types of Kolams (Waring, T. M. 2012, pg 84)

Kolam designs consist of two-dimensional picture languages explains Govindaraj, (2021). With this, knowledge is recognized as a mark of refinement, cleverness, development and concentration. Also, Kolams expresses many mathematical ideas. Sikku is shown in Figure 2.9 is a unique type

of mathematical graph in which the intersection points are defined as vertices. Connecting those vertices are referred to as lines or edges. The loops are curved and closed. Those who are not professionals, from the native state of Tamil Nadu, India or anywhere else, often miss the significance of the variety of dots and instead focus on the beauty and complexity of the line designs. But the dots provide a skeletal structure to the Kolam, and this significance is revealed in many ways. The dots play a very important role to produce a correct Kolam. To produce a perfect Kolam, dots should be correct as the traveling lines of the are completely dependent on the dots. Interestingly, with the same number of dots, many patterns are possible.

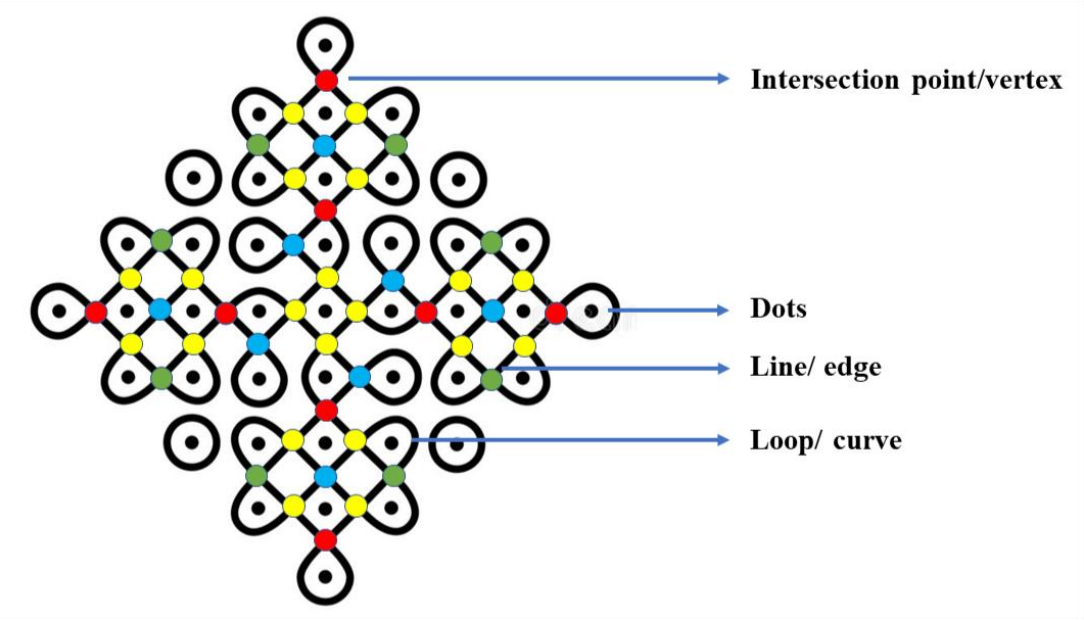


Figure 2.13 Sikku Kolam (Author's own)

This type of change in the ability to encode and represent designs could lead to a slew of new pattern possibilities. Unknowingly, the Tamil Nadu women have demonstrated a method for generating multiple patterns from a set of any numbers of dots exhibited on the floor surface for many generations. This shows that anyone can understand this pattern, even if they don't understand the mathematics behind the pattern creation.

Understanding the drawing method aided the researcher in comprehending, sketching, and creating the finished artwork. This was be based on the grammar rules (Govindaraj & Mahendran, 2018), which provided the basic set of making instructions. The artist oversees further alterations and sizing. Further, this study opened more opportunities for the researcher in creating a wide range of

designs based on the arrangement of dots and looping around them. On this basis, it was helpful for the researcher to analyse a variety of Kolams to see if they met the criteria for developing the textile research artwork.

2.5.2 The psychology of colour for wellness

Colour was the second major artwork element the researcher addressed after Kolam patterns, and it was investigated further. Mindful of the fact that the colours to be used had to contribute towards wellbeing, colour therapy or chromotherapy was examined. People's behaviour and brains are known to be influenced by colour. Colour therapy has been practised for ages in Egypt, India, and China. Colours can reduce stress-related illnesses. People are affected psychologically by each colour (Gul et al, 2015).

The colours of the spectrum relate to two moods, according to Birren (2016): red and its similar hues are warm, energetic, and invigorating, whereas blue, violet, and green are chilly, passive, and relaxing. These hues have the capacity to invigorate or soothe a person's mood. Light colours are also energetic, whilst dark colours are more passive. It's about more than a pleasant sensation or personal preferences. The ability to lessen coolness, brightness, or substance arouses pleasure. The choice of or dissatisfaction with a certain colour or tone is largely a matter of personal taste. This demonstrates the Birren (2016) practical approach to the topic.

Pure hues, on the other hand, are prone to be harsh mentions Birren (2016). The author further mentions that too much "harping" on a single colour could be irritating. Chromatic hues, greens, and blues, which turn the lips black and give the flesh a cadaverous appearance, are much more evident in "moods."

According to Birren (2016), few writers on the subject appear to comprehend that a colour might have contradictory characteristics depending on the observer's perspective. The colour green is a good example of this. It is cool, refreshing, clear, and generally pleasant when viewed objectively. The subjective image formed by green lighting reflected on human flesh makes the colour immediately unpleasant. As a result, qualitative factors such as colour lists and linkages were not considered. Colour could be linked with the outer world or with a particular individual. It was insufficient unless the fact that reactions would vary as a result is considered. Warm colours were

objectively and psychologically similar, but cool colours might be radically opposing. When applied to one's own body, red, on the other hand, could appear much more intense than when applied to externally threatening objects. Whereas peaceful blues and greens could be scary. As a result, the feelings that a colour could represent are quite diverse, states Birren (2016). Hence although the chosen colours might not satisfy all the viewers, it was extremely important for the researcher to choose the right colours for the Kolam pattern so that it attracted, appealed and triggered positive engagements and outcomes for most of the participants.

Putting a spotlight on monotony vs. variation, author Birren (2016) claims that, just as warm colours ebb and flow and sensations ebb and flow, brightness stimulates and darkness relaxes, because cool colours are tranquillizing. The use of colour necessitates change, variation, and sequence. According to author Birren (2016), no human sense, including vision, can respond persistently to fixed stimuli. The author goes on to say that the eye, like any other body organ, is continually fluctuating, and that variations in pupil diameter will occur even before a constant light source is present. Even though the images on the retina (or sounds in the ear) are consistent, they will appear to fade in and out. According to Birren (2016), if turmoil and disorder are cognitively and emotionally upsetting, unrelenting repetition is likely to be far worse. Although the author's theory is personal, the belief that strange patterns and bright colours will "drive people insane" has less validity than the belief that the same impact will occur in settings that are exactly the opposite. As a result, it was critical for the researcher to explore breaking up the monotony by presenting a balanced, free-flowing visual piece of artwork to increase participation.

2.5.3 Chromotherapy colours

> Chromotherapy is a narrow band in the cosmic electromagnetic energy spectrum, known to humankind as the visible colour spectrum. It is composed of reds, greens, blues, and their combined derivatives, producing the perceivable colours that fall between the ultraviolet and the infrared ranges of energy or vibrations. These visual colours with their unique wavelength and oscillations, when combined with a light source and selectively applied to impaired organs or life systems, provide the necessary healing energy required by the body, quote Azeemi and Raza (2005, p. 482)

Sembian and Malar Kodi (2016) mention that a chromotherapist applies colours and light to acupoints and other regions of the body to treat various diseases. Candles, wands, coloured fabrics, coloured glasses, lenses, and gemstones are the most prevalent colour application items. the

authors explain that colours have both beneficial and bad impacts on the body, therefore it's important to know how much to use before employing them for their positive effects. Colour therapy or colour healing as stated by Kothari and Jahagirdar (2014) is the use of colour in various forms for the purpose of increasing balance and health in the human system.

An interesting observation by Sembian and Malar Kodi (2016) about each of the seven colours relating to one of the seven main chakras was prominent as this further emphasised the importance of the usage of the seven colours. According to Sembian and Malar Kodi (2016), chromotherapy is a treatment that uses therapeutic colours to re-establish the synchronisation of these energy centres if they are disturbed. A chromotherapist must first fix the unbalanced chakra and its cause to fully heal the ailment. If the underlying condition persists, colour therapy may be utilised to mask the signs and symptoms. Following the identification of the afflicted chakra, the authors suggest that applying the chakra's associated colour, either directly or indirectly, may provide relief. This colour will now generate electric pulses and a magnetic field of energy, which will cause hormonal and metabolic processes in the body to be triggered mention Sembian and Malar Kodi (2016).

According to the findings of the current study, the authors Gul et al. (2015) conclude that chromo therapy is an appealing, non-invasive, cost-effective supplemental and alternative treatment option with relatively minimal side effects. Gul et al. (2015) states that it has been discovered to be particularly beneficial in the treatment of stress, depression, hypertension, hypothyroidism, hepatitis B, peptic ulcer illness and conditions connected with it, alopecia, spondylosis, hematoma, neonatal jaundice, sleeplessness, various forms of aches, and even skin infections! Successful results of this non-invasive technique were of great importance to this research as the researcher could use chromotherapy colours for the final research artwork’s colour palette as it would visually engage and aid in wellbeing. While the research artwork does not fully explore chromo therapy, it is important to see its relevance when balancing the textile art to trigger momentarily, positive health benefits.

Authors Gul et al. (2015) clearly summarise all the above information as they have mention in their research about the psychological implementation of various colours according to chromotherapy standards. The authors list the positive effects of chromotherapy colours:

Red- Vitality, strength, willpower, alertness.

Orange- Happiness, joyfulness.

Yellow- Intellect and judgement, mental stability and concentration.

Green- Purity and harmony.

Blue- will power, communication, management of migraine due to psychological factors.

Indigo- Dignity, honour, self-respect and hope.

Violet- Spirituality, letting go and meditation.

This paper examines, expands and implements the above ideas on chromotherapy and the psychological effects of colour for the artwork. The researcher has used a restricted colour palette which includes indigo, cobalt blue, cardinal red, coral orange and lime green primarily picked from the above-mentioned colours as these colours were used extensively for chromotherapy. The colours have been used in order of their psychological effect which will be elaborated in the research practice chapter. The researcher has also attempted to employ the “colour medicine” Sembian & Aathi (2015, p 6) approach. Furthermore, as chromotherapy is an appealing, non-invasive, less expensive complementary and alternative treatment option with very little side effects, as evidenced by the studies, chromotherapy colours are the greatest choice for the final artwork. Also, as mentioned earlier, chromotherapy colours are very closely related to emotions and the addition of these colours in the right sequence to this research artwork will bring a new aesthetic dimension to the traditional craft of Kolam.

2.5.4 Plaiting technique to build the artwork

One very interesting technique the researcher wanted to explore for the final artwork was plaiting. Bolton (2003) has dedicated a chapter in his book Unfolding the Moon: Enacting Women's "Kastom" in Vanuatu, wherein the importance of textile and plaiting amongst the womenfolk of Ambae, Vanuatu are highlighted.

According to Bolton (2003) research, highlighting the importance of plaiting, the author mentions that men do not weave, plait, or dye fabrics. Textile production is solely the duty of women, and it is a lifetime commitment. Bolton (2003) mentions that the birth of a girl was publicised by distributing prepared pandanus over a public walkway heading down to the seashore in the days when births were placed in a menstruation hut inside the community. The arrival of a boy was announced by the sprinkling of miniature bows and arrows. The tribe's women made pandanus and miniature bows and arrows out of plaited fabrics. As a result, plaiting has been associated with females since childhood.

Figure 2.14 Different braided products from early times. (*Peabody Museum of Archaeology and Ethnology)*

Plaiting has been practiced for many generations by binding natural fibres to create a variety of utility-based products in many cultures around the world. Various plaiting techniques were used depending on the final product that was desired to be achieved. Figure 2.10 and figure 2.11 show examples of ancient and modern objects made of natural fibres, such as headbands, bags, mats, and fans, as well as rugs made of cotton fabric strips. Plaiting in different patterns and with different materials produced different shapes. Figures 2.10 and 2.11 are examples of how plaiting

with individual strands may be employed to create utility-based goods that are both robust and attractive.

Figure 2.15 Handmade cotton strip braided rugs (etsy.com)

Carter (1951) explains how to make braided rugs with step-by-step instructions. In his experiment, long strips of fabric are braided to produce cloth rugs of different shapes and sizes. Figure 2.11 is an example of how Carter had explained to make braided rugs.

This braided rug method piqued the researcher's interest, and hence was encouraged to try the plaiting approach for the final research artwork for the following reasons:

- The ability to create patterns on a flat surface with ease.
- The ability to combine multiple hues to add dynamic to the final artwork.
- The ability to fill gaps with ease while maintaining the flawless quality of the final artwork.
- The ability to achieve various thickness to fill different sized gaps.
- The aesthetic look achieved by the braided rug.
- The ability to create a tactile 3D visual feel.

Plaiting was vital to the researcher as a textile artist for the reasons stated above to generate a clean, aesthetically pleasing, and visually engaging finished Kolam textile art creation.

2.6 Chapter Summary

Most of the publications in this review focus on the positive benefits of the arts in healthcare on patients. Furthermore, this review demonstrates that the current research places a strong emphasis on observing the impact of visual arts on patients and service users. The results of using other types of art were mainly good, with improvements in respiration, endurance, and muscle strength indicated. There were also reductions in anxiety and depression symptoms, similar to the benefits of visual art, suggesting that the intervention's involvement in rehabilitation could be as essential as medication. Individuals also benefited from improved happiness and satisfaction, as well as the ability to share and connect with others, as well as increased social engagement. Kolams, which are customarily applied on the thresholds of homes, have been shown to be mentally and physically soothing for both the participant and the viewer. Incorporating patterns into artwork will be visually beneficial and add significantly to the well-being of spectators in a healthcare or public setting. Overall, the research examined show that patients and service users value the arts in hospital and public settings and recognise its beneficial impacts, advantages, and gains. Integrating Kolam patterns into the textile artwork will give the installed site an intriguing and original look. This will also help to approach the subject from a different angle and capture some very interesting observations.

2.7 Conclusion

This literature review helped the researcher to understand how to create the final therapeutic Kolam textile artwork which primarily had to aid in visual wellbeing. For this purpose, it could also be summarised that visual art (through passive methods), textile art (through active methods) and Kolams individually contributed towards wellbeing in their own ways.

These components or elements or techniques of wellbeing selectively chosen from each of the existing visual art, textile art and Kolam pattern could be combined and help produce a therapeutic textile artwork (Figure 2.10).

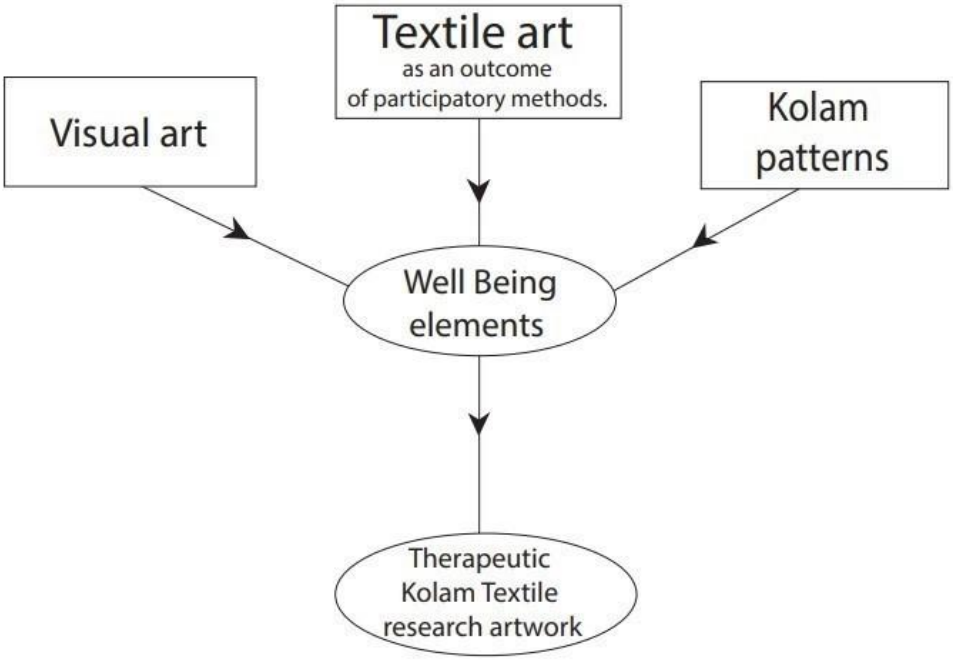


Figure 2.16 Diagram showing a realistic approach to the derivation of therapeutic Kolam textile research artwork. (Author's own)

This understanding about the construction of the research artwork, helped the researcher to create very effective handmade and digital art pieces, using the methodologies and methods discussed in the following chapter.

Chapter 3 - Methodology

3.1 Introduction

This Master by Research thesis uses an art-based research approach to create participatory viewer interactions. The researcher will begin by establishing the theoretical background of the technique used in this thesis, before moving on to examining the actual investigative procedures used to construct the research's final artworks. The chapter will conclude with a reflective description of the research process, with a focus on the researcher's impact on the process. These discussions will also imply how the methodologies and methods used will be relevant to this study.

Being 'the researcher' or 'an outsider' attempting to explore a phenomenon occurring in an unknown setting might have several drawbacks. Robson (2002, p. 540) quotes that ‘if you are an outsider, you will need to find out a substantial amount about the client’s needs and expectations, and to be aware of the setting and context in which the study will take place’. This was taken into consideration at every stage of the investigation. Among other things, the researcher faced two big hurdles. Firstly, the artworks had to be presented in a range of locations and to achieve the best level of engagement from a variety of audiences in each space, the artwork had to be visually appealing even if the researcher was not there. Even though the artworks could not be made according to everyone’s taste, it had to intrigue and capture the interest of the audience. Secondly, the textile art piece had to contribute to visual well-being in every capacity possible. As a result, all elements and approaches, were required to focus on the same idea.

The researcher for this paper used an exploratory method of design interventions to look for factors that contributed to visual wellbeing and included elements that are visually captivating and hold the viewer's attention long enough to experience and compare the two artworks, one of which is handmade and the other a digital replica of the same. Further, innovative, meticulous, and comprehensive type of craftmanship to elicit the spectator's willingness to participate have been employed. Both the artworks were displayed alongside each other, making it a comparative study.

The project was originally intended to focus on the healthcare setting, but due to time restrictions for obtaining permissions and the Covid-19 pandemic in hospitals and other healthcare settings, it was expanded to other public places in Huddersfield and Leeds. This was a definite advantage for

the research because it would allow people from all walks of life to participate, resulting in more efficient outcomes.

3.2 Engaging qualitative methods

Qualitative methods of analysis were used for this research which included online and manual questionnaire and optional online interviews. The below sections discuss how, why and on what basis were the questionnaires formatted to get productive results.

Tolley et al. (2016) state in their chapter that qualitative studies are inductive, meaning they are intended to investigate and account for the broader psychological, social, political, or economic circumstances in which research questions are formulated as opposed to quantitative methods. Qualitative researchers usually start with broad, open-ended questions and work their way up to more specific inquiries as more information becomes available. This was one primary reason for adopting qualitative research for this practice. While past research and theory may suggest certain constructs in a conceptual framework, such as the need to analyse how health policies influence health outcomes, their definitions and links may be simply speculative at first. Further Tolley et al. (2016) mention that as more data is gathered, the meanings of these ideas or concepts begin to emerge, necessitating preliminary analysis as part of the data collection process. Qualitative analysis detects emerging ideas and discoveries from textual data. As the analysis progresses, new discoveries combine into themes, which may evolve into new hypotheses or research questions. As a result, an emergent process begins in the field and typically continues until the study is completed. (Tolley et al., 2016, pp. 174-175). This emergent process was very essential for this research as this would pave way for questions for further research.

Great relevance to qualitative research was found through the above studies, as this method could assist earlier researchers in better understanding of how respondents' debate and perceive the topic. It would undoubtedly aid in gaining a better understanding of respondents' thought processes and rationale for their responses during the engagement. Furthermore, surveys could be utilised to assess the accuracy of the valuation process as well as the public's acceptance of the valuation exercise. Two selected methods of the arts-based research and the questionnaire method for this research, are discussed further.

3.2.1 Art based research

This section intends to highlight the importance of Art based research (ABR) and how it is relevant to this research. ABR is a transdisciplinary approach to knowledge building that combines the tenets of the creative arts in research contexts mentions Leavy (2009, 2015, 2017). Leavy (2009, 2015) has described ABR practices as methodological tools used by researchers across the disciplines during any or all phases of research, including problem generation, data or content generation, analysis, interpretation, and representation. According to Leavy, ABR originated from qualitative inquiry, and some academics see it as a stand-alone paradigm. As a result, researchers have re-evaluated the quality standards for ABR investigations. According to Chilton and Leavy (2014), the following factors are more acceptable for ABR:

- Question/method fit: a strong rationale for the using ABR techniques to satisfy the study's objectives.
- Aesthetic strength: artist's capacity to convey meaning via their work.
- Utility: The educational value of the work, its value to the artform, and/or its ability to call attention to a major problem.
- Participatory/transformative: suppressed voices' active participation in artistic production
- Authenticity: The researcher's work is open and self-reflective
- Canonical generativity refers to the artistic works' appeal with a larger demography than the original sample.

These phrases are exclusive to ABR, but they are useful in defining what constitutes acceptable arts research. Based on the above observations, the researcher was very keen to make the final artwork based on ABR. The active research was primarily based on comparing two artworks which obviously fell into the ABR category. The final research artwork was planned to incorporate Kolam patterns (Chapter 4.1.1.2 of this paper) to highlight its aesthetic strength. Although participatory methods were not possible due to the COVID-19 pandemic, the researcher was very keen on giving a tactile visual experience to the viewer by employing artwork-making methods like intricate methods of constructing and plaiting.

When publishing or translating study findings to the public, the quality of the research is constantly evaluated, when delving deeper into the value of Artist Based Research (ABR). One of ABR's

strengths, according to Lafrenière and Cox (2013), is its focus on interpreting information for a wider audience, as evidenced by its quality criteria. One of the assets of the arts, according to Chilton and Leavy (2014), is their ability to distribute knowledge to a wide audience. Because they inspire the audience to have an embodied experience that has an effect (Lafrenière and Cox 2013), the arts can convey research findings regarding the experience. Based on this discovery, the author of this study concluded that a highly effective artwork would allow the audience to experience and influence the research issues in a more efficient manner. The final research artwork had to be interesting and realised to engage a larger audience for this purpose. An installation in the visual arts can elicit a variety of sensory responses in the spectator states Lapum (2018). When the research issue is complex, experiential, and difficult to describe in words, this type of audience response is very significant mention Lafrenière and Cox (2013). This substantial viewer response aids the researcher in compiling more useful research findings. As a result, the final artwork's design had to be complex but not perplexing, and it had to be meaningful for participants' artwork engagement.

3.2.2 Aesthetic Experience Questionnaire (AEQ)

The qualitative analysis in this research primarily involved a questionnaire method. The Aesthetic Experience Questionnaire (AEQ) was chosen for this questionnaire because of its relevance to this study, which is detailed in this section.

AEQ was developed by Wanzer et al. (2020) to assess the aesthetic experience. According to Wanzer et al. (2020), the AEQ has good internal consistency, strong factor loadings that generally loaded into the speculated factor structure, and mild to strong correlations across elements (2020). This would be of great relevance to this research as this study was a visual experience rather than a tactile experience, which required the researcher to retain greater attention spans of the viewer for collating questionnaire responses.

Individuals who encountered art more frequently had more intense aesthetic experiences, as expected, according to the authors Wanzer et al. (2020), but there were no differences in AEQ ratings based on whether they had previously received art instruction or worked in an art-related occupation. Females and the elderly, according to the authors, had stronger aesthetic perceptions,

particularly in the emotional and flow subscales. Individuals with a lower level of education, as well as those with a lower level of income, reported more powerful emotions and sensations of flow in aesthetic encounters. Wanzer et al. (2020) also mentioned that individuals with a lower socioeconomic status also reported more strong aesthetic impressions of flow. Because there has been little research on flow or aesthetic experiences by gender, age, or socioeconomic level, further research is needed to understand these demographic disparities in aesthetic experiences.

These findings helped to identify an age range of 20 years and above, and ideal venues for the active research keeping the target audience in mind. Considering the above causes and effects of AEQ method for qualitative analysis, the researcher emphasises that this method would fit in exactly within this study's frame and help yield better results and might answer the many gaps that authors (Wanzer et al., 2020), have mentioned in their findings as they were based on aesthetic viewing experience. Moreover, all the necessary elements, techniques and methods to achieve the final artwork of this paper have been employed.

3.2.3 Questionnaire structure

Succeeding participant information sheet and consent form, the questionnaire was formatted. The type of questions was carefully formed and picked based on AEQ and relevance to the research. For this, the questionnaire format was structured with a mix of short answers and multiple-choice questions. The questions were divided into three sections. Section A included details of the participant and their location. Section B highlighted participant views and engagement with art and the research artwork. Section C was formatted to receive the viewer response with respect to their emotional experience.

The researcher was mindful of a five-minute questionnaire completion time frame for the respondent to determine the number of questions. This was critical since too little time would result in limited information, while too much time would cause the observer to lose patience and hence fail to respond. Once the questions for the survey were shortlisted and finalised, the questionnaires were designed as both online and as manual forms.

3.2.3.1 Online questionnaires

Microsoft Forms was used to design the online questionnaires based on the questions formatted in the survey. The questions were named, labelled and defined. These questions were preceded with participant information sheet and participant consent form. A QR code was generated for this form, which when scanned would redirect the participant to the online survey.

3.2.3.2 Manual or physical forms

Apart from these forms, physical forms were sought at two display locations because the predicted participant demographic included public over 60, who either did not have access to the internet or were not technologically inclined. These forms were formatted using Microsoft Word and the required number of copies were printed out.

3.2.4 Questionnaire analysis method

The survey data were analysed using the Microsoft Forms. Microsoft Forms can provide one with intelligence-based data insights about responses to questions on a survey or other type of form. Questionnaires answered via QR code method were directly fed into the Microsoft Forms. On the other hand, data from the completed manual forms were entered into Microsoft Forms by the researcher after the survey had taken place. Following this, all the input data were checked if they were correct.

3.2.5 Questionnaire benefits and limitations

The use of a set study design, such as a survey, had both benefits and drawbacks. Both the pros and cons of the questionnaire method had to be studied to incorporate only the most effective and relevant research questions for this research. The benefits and drawbacks are discussed below.

3.2.5.1 Benefits

The questionnaire was a combination of single/ double line and multiple-choice answers making it easy for the participant to answer within a brief time. The researcher was able to narrow down the subject and ask questions very specific to the topic or lead the viewer to questions which enquired answering step by step. Using the optional online interviews, each survey respondent was

given the opportunity to express more about their experiences viewing the artwork or to address any issues.

3.2.5.2 Limitations

Although the questionnaire was developed with single and double-line answers as well as multiple-choice questions, it did not easily allow for participant interpretation or for a participant to extend or comment on what they were saying. They were limited to the researcher's or survey designer's quantified measures, which were either pre-coded questions or open-ended responses that were post-coded. Few participants may not answer the questions completely as well.

3.3 Ethical considerations

Ethical issues are crucial in all social research and might develop at any point during the process (Bryman, 2008, p. 505). Researchers must 'have a clear understanding of the ways in which ethical dilemmas can arise when carrying out their research' quotes Henn et al. (2006, p. 68). As a result, this study was prepared and submitted for ethical approval utilising the documents and advice provided by the University of Huddersfield's School of Arts and Humanities. The participants' informed consent was required for answering questionnaires or optional online interviews. The British Educational Research Association (BERA) takes informed consent 'to be the condition in which participants understand and agree to their participation without any duress, prior to the research getting underway' quotes BERA (2004, p. 6). Both the online and manual questionnaire forms (see appendix 3) were preceded by participant information sheet (see appendix 1) and participant consent form (see appendix 2) for which the participants had to give consent before starting the survey. As the active research took place in four different venues, the first point of contact person for the respective establishments was trained on how to use the questionnaire, briefed on the procedure, and given background information on the topic. Safety was taken into consideration, and a risk assessment was done utilising the University's guidelines and form (see appendix 7). This entailed identifying and highlighting any dangers or hazards, as well as ensuring that proper precautions were taken to minimise them.

3.4 Summary

Based on the findings of the previous research, it was chosen to design a very effective final ABR artwork that was both visually appealing and engaging. This was critical because presence of the researcher might influence participant response and could result in being biased. It would be designed to integrate design elements and Kolams that contributed to wellbeing that were unique, beautiful, and engaging, as well as analyse the viewer's experience.

The questionnaire, on the other hand, had to be developed in such a way that data or content generation, analysis, and interpretation were all included. Following the collection of the participants' age, occupation, and art background, further questions based on AEQ would be asked, primarily questioning and assessing the degree of emotional interaction and effects due to the final research artwork. This would aid the researcher in analysing a variety of questions, which included:

- Has the artwork had an impact on the viewer? Which artwork has had the least and most impact, handmade or digital?
- How did the artwork contribute towards wellbeing as a therapeutic cloth?
- Have the chosen artwork elements contributed towards engagement and visual wellbeing? If yes, how?
- Have the factors like, age, occupation, venue and art background made any difference in the results?
- Did the artwork instigate an emotional connect with the viewer to engage him/her with it?

The above were some basic questions that the researcher would expand on to work on the final Kolam textile artwork and the qualitative analysis study questionnaire. In the following chapter, the final artwork process will be analysed and discussed in detail, starting from planning to execution.

Chapter 4 - The Research Practice

4.1 Artwork design process

It was extremely important for the researcher to consider all the possible factors and elements relevant to this paper before creating the final artwork and thereafter the digitally printed flat representation to use as a comparison. A prototype artwork was essential to study the advantages and the disadvantages of the artwork making process before proceeding to the final artwork. For this purpose, the artwork process was divided into five stages.

- Stage one included planning for the overall artworks,
- Stage two elucidated the prototype artwork process in specific
- Stage three explained about the final artwork process and
- Stage four described the digital artwork process

For the final research Kolam textile artwork, the researcher decided to use the wellbeing elements from Kolams, visual art and textile art. The wellbeing elements and analysis for this have been discussed in detail in the literature review of this paper. This analysis of the literature aided the researcher in determining how to develop the final therapeutic Kolam textile artwork, which had to primarily aid in visual wellbeing. For this purpose, it may also be stated that visual art (through passive means), textile art (by active methods), and Kolams all contributed to wellbeing in their own unique ways. These wellbeing components, elements, or techniques, selected from current visual art, textile art, and Kolams, would be used to create a therapeutic Kolam textile artwork which would attract and engage the audience in any kind of healthcare and public settings.

For the final handmade and digital artworks, Kolam's adaptability was both an advantage and a difficulty, as the researcher had to consider the size, time limits, transportation and conversion to a digital artwork. The Kolam pattern had to be of high quality and reflect its characteristics like colours and detailing equally, even as a flat digital print representation. As a result, the artwork was given a practical approach with schedule restrictions by settling on an acceptable size for the artwork so that it could be seen and transported easily. In terms of the complexity of the techniques involved, time was also a crucial concern. This section describes the various stages from planning to the execution of the final artwork.

4.1.1 Stage 1: Planning

The initial steps of designing and producing the textile artwork necessitated the selection of research methods, design tools, and techniques, as well as the selection of active research places. It was a significant challenge for the researcher to keep in mind the research's goals, retain the aesthetics of the artwork, and be cognizant of the technical aspects of creating the artwork at the same time. All three elements were interconnected and compromising any one of them would break the link, resulting in possibly failing to meet the researcher's specified expectations for this research, (Figure 4.1). As a result, it was critical to examine all the variables prior to and during the planning of the final Kolam textile artwork.

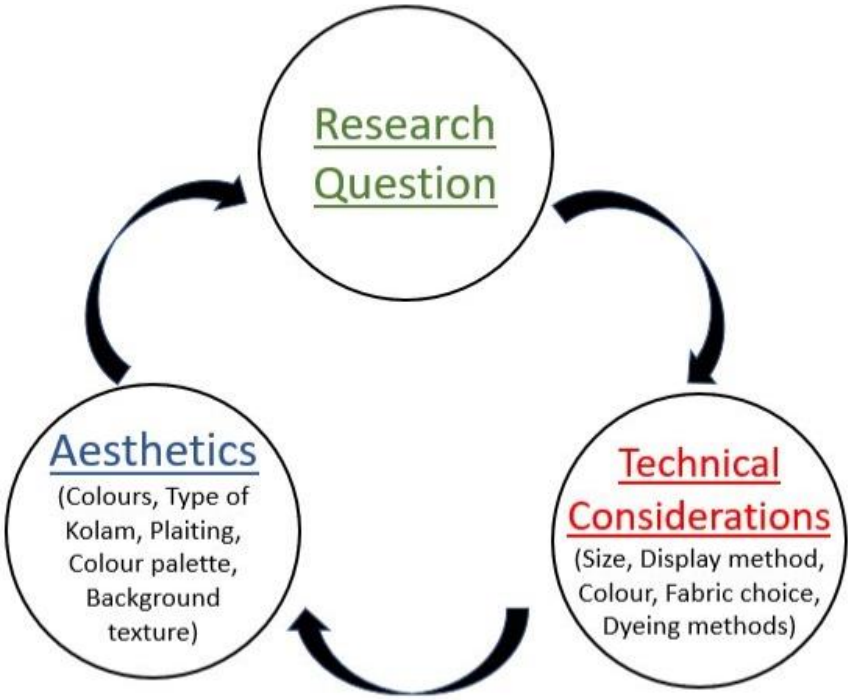


Figure 4.1 Diagram depicting the interconnection between the three main elements of the research planning process to create a final Kolam textile artwork. (Author's own)

A prototype artwork was developed before the final artwork was created. While enquiring and finalising venues, the prototype artwork was done concurrently. As discussed above, multiple factors were considered to build the prototype artwork. These were forecasted and considered in the planning stage to avoid later confusion.

Artwork elements	Planning considerations
Size of artwork.	• Viewing aesthetics from a distance in a variety of set ups. • Scaling of the design for the braiding within the Kolam pattern. • Time limit to finish artwork. • Safe transportation. • Size specifications from the venue authorities.
Type of Kolam.	• Visual appeal. • Potential eye flow of the viewer.
Colours, Fabric choice and Dyeing methods.	• Visual appeal in both handmade and digital version. • Limit down the colours and braid sequencing options. Dyeing time duration constraints. Dyeing light fastness.
Plaiting.	• Visual appeal in both handmade and digital version. • Scale • Material • Clean and precise finish for final artwork.
Determining the colour palette.	• Visual appeal. Highlighting main pattern. Complimenting background Kolam artwork elements with the main pattern.
Determining braid length and attaching.	Achieving reasonable braid length without tangling and avoiding too many joints on the artwork base. Attaching braids together with precision finish, avoiding elevations.
Background texture.	• Visual appeal. • Complement the main pattern.

Table 4.1 Artwork elements and planning considerations for planning the final artwork.

Furthermore, the considerations aided in meeting any additional requirements stated by the institutions being considered for display (such as size and framing requirements).

4.1.1.1 Size of artwork

As the completed artwork had to be moved, installed, and uninstalled in several locations, size was a crucial consideration. The following criteria had to be considered while deciding on the final artwork size:

- Viewing aesthetics from a distance in a variety of set ups

The final shape was decided to be square and two feet by two feet in size. As the handmade artwork had to be placed besides the digital artwork in various venues which would be of various dimensions, this size was ideal to view from a distance without losing its aesthetics and would engage the observer. It was required to install on the wall at three venues and mount on an easel in the fourth. These arrangements would be easier with this size.

- Scaling of the design

The final pattern's scaling and detailing were also critical, as it needed to retain its beauty while being constructed in the right size to show off its subtleties. It was also crucial for the audience to understand and follow the major pattern that the researcher wanted to emphasise. Because the final Kolam pattern required many mathematical calculations for design, sizing, and scaling, two square feet was an appropriate size.

- Time limit to finish artwork

As the researcher had decided to create a prototype artwork before moving on to the final artwork, time was another factor to consider. Furthermore, a photograph of the finished artwork was required to place an online order and obtain the digital artwork in time for the active study to begin. Making both the prototype and the final artwork took a great deal of time but this was essential as the former could not be compensated in terms of size or artmaking process, and the latter's benefits and drawbacks had to be evaluated from it. At this point, the prototype artwork was estimated to take 30 days to complete, while the final artwork would take 20 days.

- Safe transportation

As the active research would be shown in a variety of places, it was necessary to consider the size of the artwork to ensure safe transportation, installation, and removal. Hence, the researcher chose not to frame the artwork with glass, but during venue inquiries, one of the hospices insisted that the artwork be shown in a glass frame for safety and ease of cleaning. Again, two square feet was the best choice for transporting with a glass frame.

- Size specifications from the venue authorities

Most venue authorities were unconcerned about the size of the artwork because they could accommodate any size, such as cafes, but during the venue inquiry, a few establishments, such as the library and the hospice, were confident about not having very large artworks due to space, display, and maintenance constraints. However, because no exact sizes were specified, the researcher recommended a two-square-foot digital and glass-framed handmade artwork, which was accepted by all venue in-charges.

4.1.1.2 Type of Kolam

The type of Kolam had a great influence on the aesthetics of the final artwork design. As discussed in the literature review of this paper, Kolams patterns are an amalgamation of dots and lines and a result of mathematical calculations. These mathematical calculations determine the type of pattern and size of the final Kolam. A huge Kolam could be broken down to small repeating single motifs as previously stated. It was important to choose the right Kolam for the right visual appeal. It was interesting for the researcher to play around with different layouts based on a single motif to develop the right Kolam patterns without deviating from the Kolam grammar rules. All through this process, the researcher was mindful of the potential eye flow of the viewer and hence, made it a priority to highlight the major pattern because deciphering the Kolam's end and finishing point was a challenge by itself.

Many Kolam designs feature the curves unique to Sikku Kolams (Ascher 2002). It's also obvious in Robinson (2007) works, that the author has utilised Sikku Kolams to demonstrate the pattern extension capability for Kolam pattern generating through an “Extended Pasting Scheme” (EPS)

(p. 58). Figure 4.2 shows how there are groups of figures in Sikku Kolams that have similar qualities. The larger figures or Kolams in a family, according to the author Ascher M (2002), are made up of numerous joined copies of smaller figures, although the family members in other circumstances are derived from each other in more subtle ways.

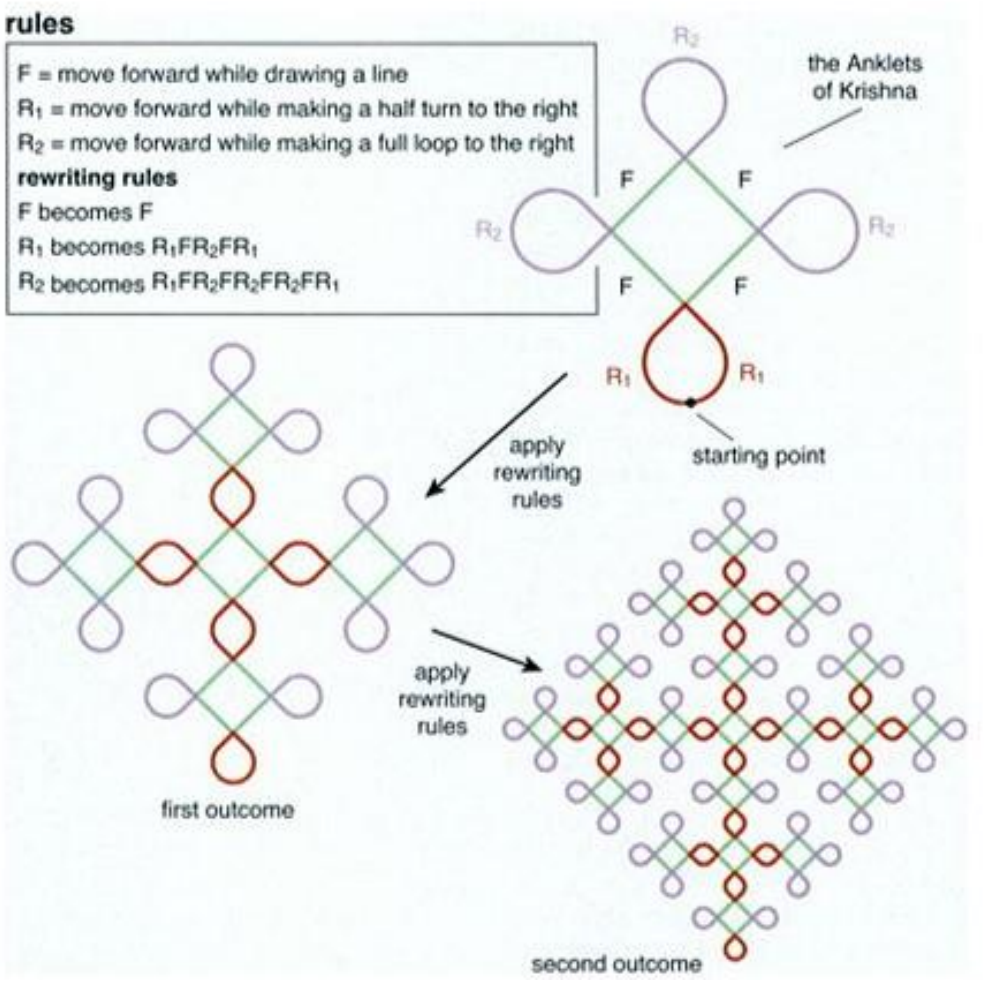


Figure 4.2 Sikku kolams grammar rules (Ascher 2002, p. 61)

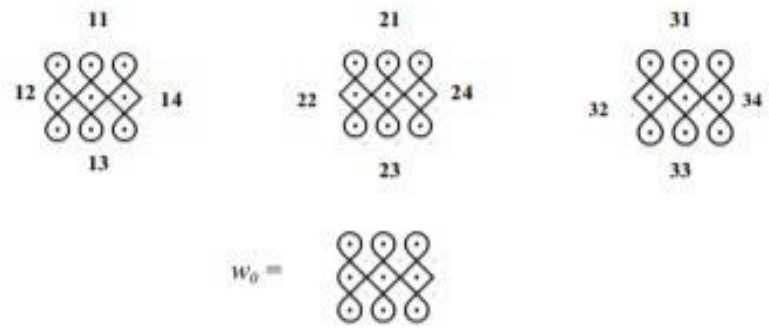


Fig. 4. The set of tiles and the axiom for G_1.

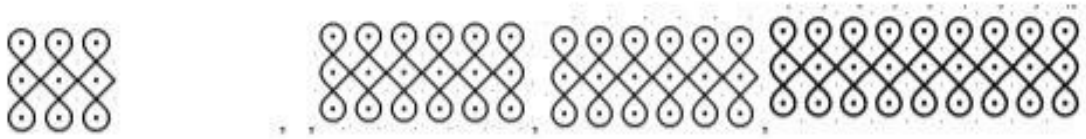


Fig. 5. A sequence of Border kambi kolam patterns.

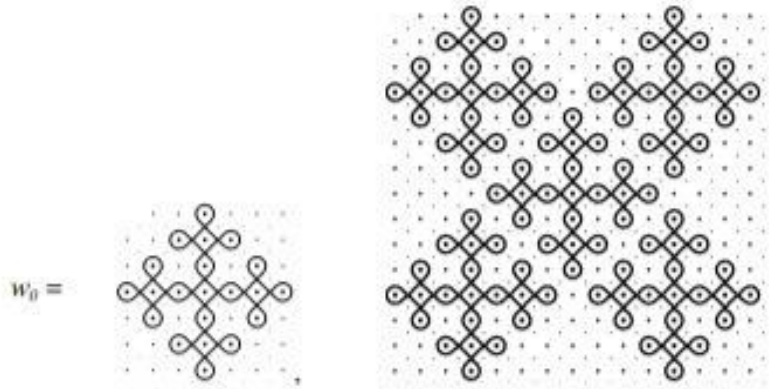


Figure 4.3 Extended Pasting Scheme (EPS) in Sikku Kolams (Robinson (2007, p. 59)

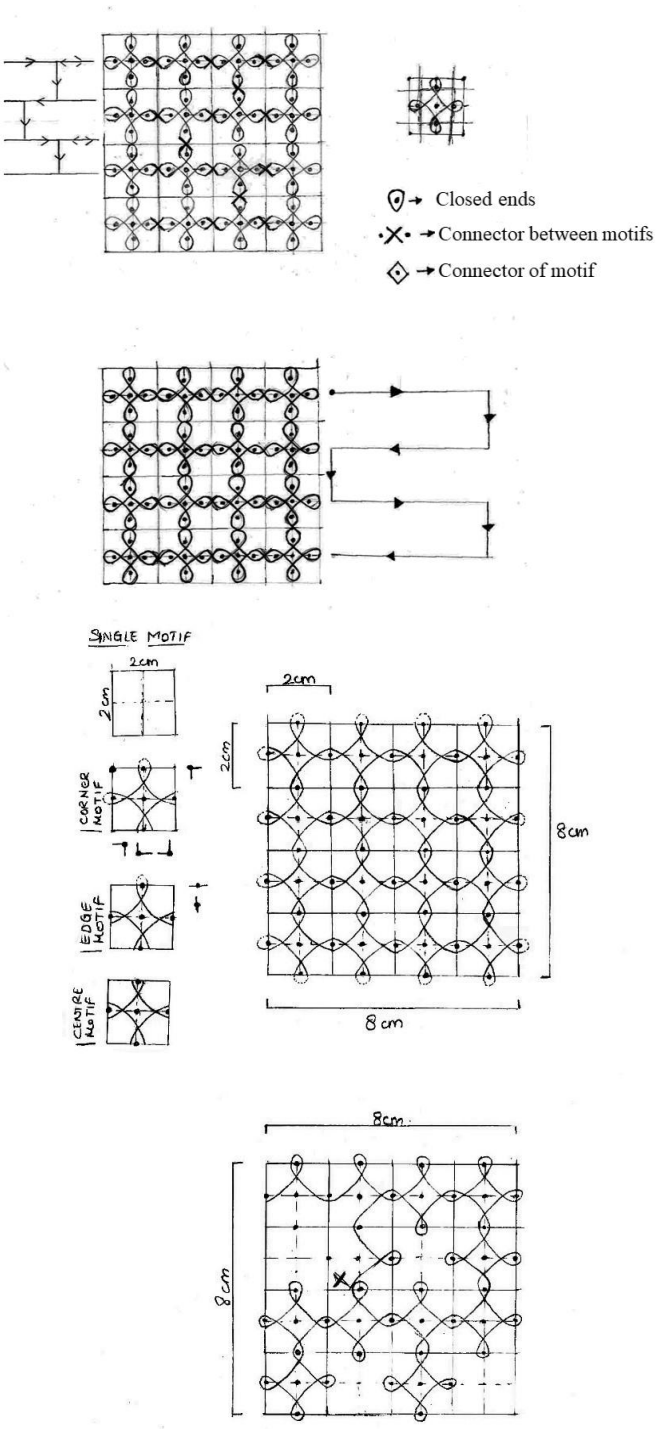


Figure 4.4 Trial and error method to decipher final Kolam pattern based on Kolam grammar rules and EPS . (Author's own)

Figure 4.4 shows drawings made by the researcher *based on Kolam grammar rules and EPS* within eight square centimetres (which could easily be scaled up to two square feet). This square was then filled with two square centimetres repeating single Kolam motif. The trick was to determine the looped ends (closing ends) and the 'x' joints between each small motif to make the continuous final Kolam pattern, to keep the observer's eye flow in a zig zag pattern. Although the researcher knew the flow of Kolam from start to finish, it was realised that translating this as an artwork would not be very distinct and the artwork would not be self-explanatory on this aspect. Even though these attempts failed, the researcher had a better understanding of how the Kolam flow would work well for audience's attention and a good understanding of how to use highlights and play down different aspects of the final Kolam artwork. A few more Kolam designs were also attempted, each with its own palette, as mentioned in the next section.

4.1.1.3 Colours, fabric choice and dyeing methods

Various combinations of the already chosen chromotherapy colours (Indigo, Cobalt blue, Lime green, Lemon yellow, Coral orange and Cardinal red) were investigated to complement the Kolam pattern and contribute significantly to the final artwork's visual beauty through colours. Here, there were experiments with combinations and Kolam patterns. The Kolams were either a scale up of repeating single motifs or a single Kolam by itself.

The experiments with a mix of all the colours, as illustrated in figure 4.5 in contrast with experimentation with warm and cool colours is presented separately in figure 4.6, where the researcher was mindful of the aesthetics of the artworks and the venues in which they will be displayed. It was also discovered that the chosen palette could also be arranged in a rainbow sequence (VIBGYOR, excluding the Violet) (Figure 4.7). Meanwhile, for the proposed final artwork size, figure 4.8 depicts a mixed palette with a single Kolam motif repetition from a large Kolam pattern. All these studies helped to limit down the colours and sequence options for the prototype and final artwork.

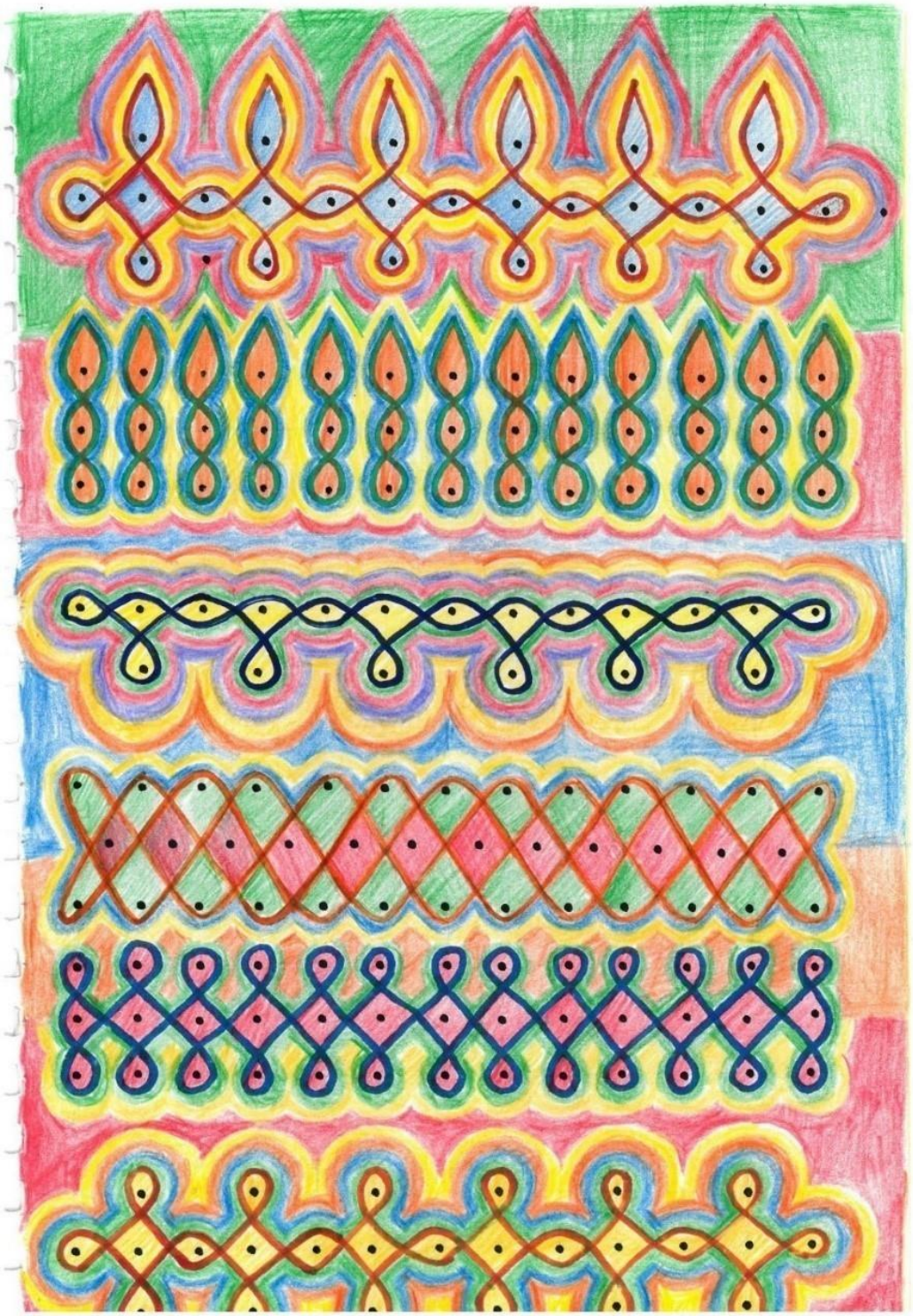


Figure 4.5 Sketching experiments with mixed colours of chosen palette (Author's own)

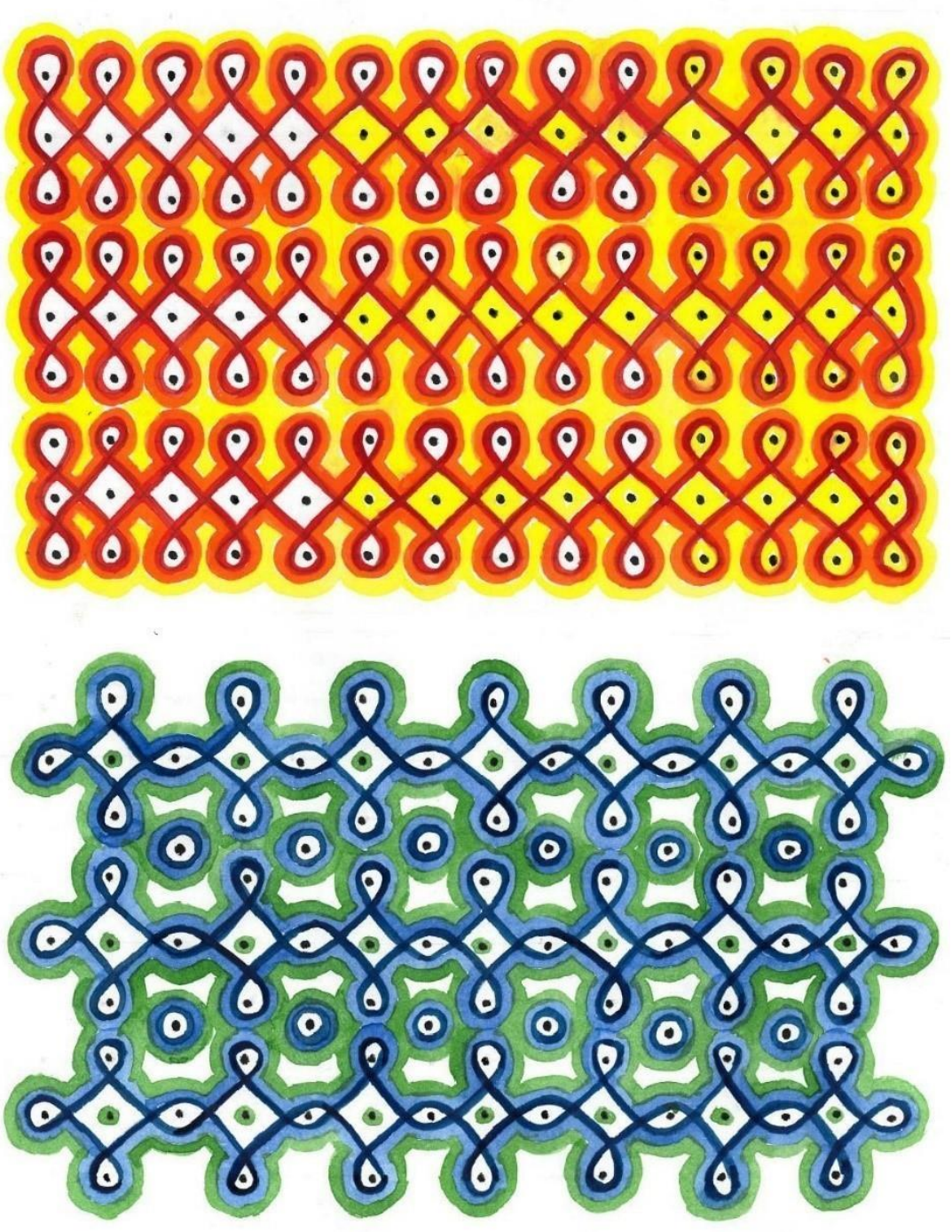


Figure 4.6 Sketching with warm and cool colour palettes (Author's own)

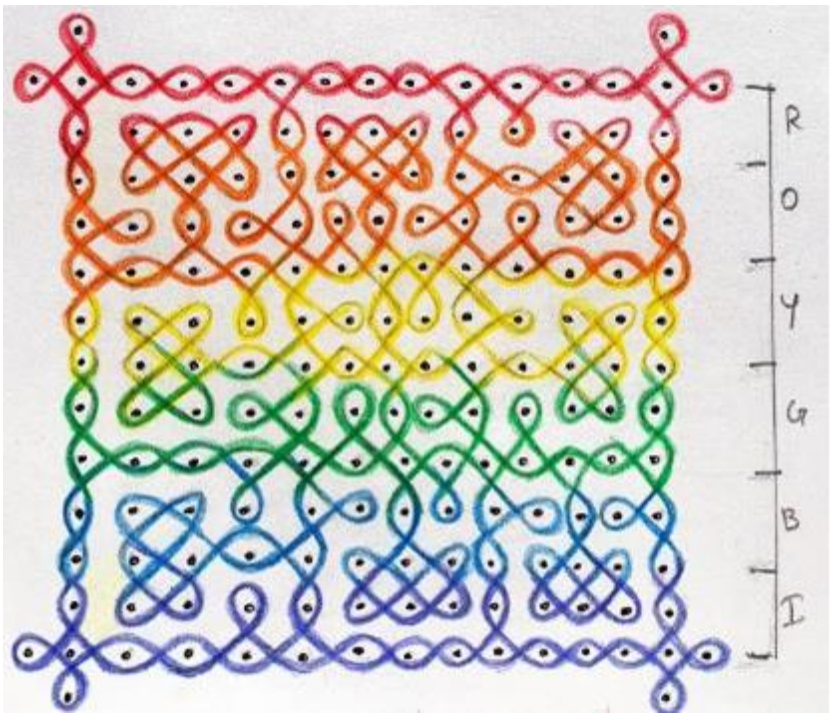


Figure 4.7 VIBGYOR colour sequence experiment (Author's own)

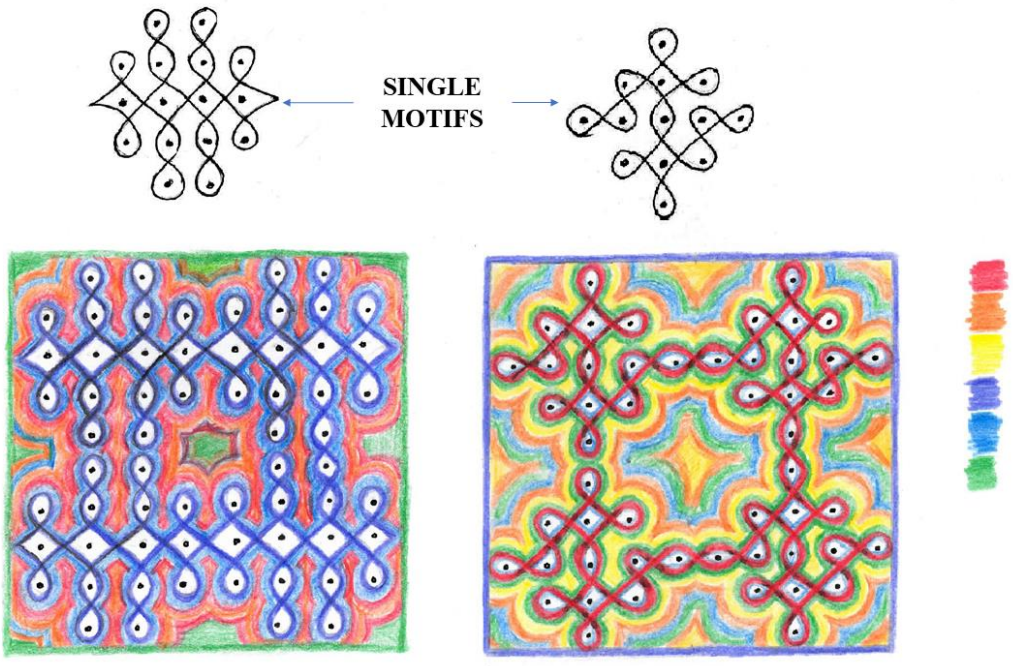


Figure 4.8 Single Kolam motif repeating to form big Kolam patterns (Author's own)

For the choice of fabric, due to Covid-19 pandemic lockdown, readily available materials like wool for the prototype artwork had to be used. However, handmade organic cotton fabric was sourced

at the time of travel by the researcher from her home country India and was reserved for the making of the final artwork. Since the birth of the research idea itself, an urge was felt by the researcher to use cotton for its ethical and traditional aspects associated with India alongside environmental considerations related with this fabric. The workmanship of the handwoven cloth to accentuate the handmade authenticity of the final artwork was also intended.

Different dyeing methods were experimented at various stages of the artmaking process. For the single motif experiment, the cotton braids were dyed in a home setting using a combination of the researcher's water and acrylic paint to produce the desired hues. The dyeing procedure involved both dip method by adding colours to the braided plaits by dipping them into a container and brush method by using a brush to paint over the braids. Both approaches were unsatisfactory since the colours were unequally distributed and did not penetrate between the braids in the above methods, respectively. Hence, it was decided to dye the required length of cloth initially, followed by tearing the fabric to strips of required thickness and then plaiting for the trial experiments.

The prototype artwork's woollen yarns were dip dyed. Unlike cotton braids, wool due to its elasticity absorbed colours into its dents as well. It however was observed that the woollen threads took longer than cotton braids to dry and needed more dips to get the desired hue with extended drying times in between.

For the final artwork, initially the researcher wanted to explore eco-friendly, natural dyeing methods for dyeing the fabrics of the final artwork. However, natural dyeing process was very elaborate and would need more time. Moreover, it gives a dull finish to the final product. Whereas reactive dyes were largely timesaving and provide a wide range of hues with good light fastness and great wash fastness on cotton. They are valued for their brilliance and variation. Hence due to all the above advantages of reactive dyes, they were preferred over natural dyes for the final research artwork.

4.1.1.4 Plaiting

The researcher wanted a fabric manipulation method which would look intricate, give a clean finish, keep the cloth in place, be flexible to combine various colours and give a tactile 3D visual feel for both the handmade and digitally printed flat representation. Plaiting satisfied these

conditions and hence was one of the main techniques of this research artmaking process. This technique helped bind the fabrics to give the exact form and shape of the final research textile artwork. As mentioned in the literature review chapter of this paper, plaiting was chosen as it could create patterns on a flat surface with ease. It easily to combined multiple hues to add dynamicity to the final artwork and also helped fill gaps with ease while maintaining the flawless quality of the final artwork. It allowed creation of braids of various thickness which could fill different sized gaps with ease and the aesthetic look achieved by the braided rugs (figure 4.9) was exactly what the researcher wanted to employ.

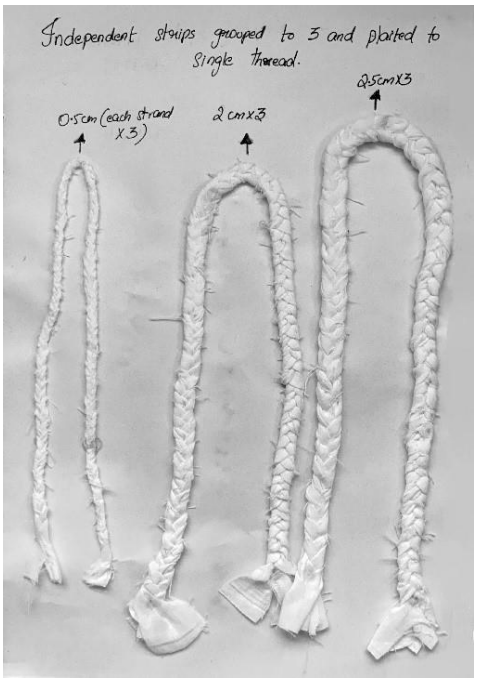


Figure 4.9 Braids of varied thickness

(Author's own)

Figure 4.10 Sample Kolam pattern with four strand braiding

(Author's own)

Hence, the researcher used the braiding method as mentioned by Carter (1951), in his step-by-step instructions to make a braided rug. Carter's braiding method produced smooth, flat braids with smooth edges, resulting in a seamless rug. Carter (1951) further adds that the ends of one strip are less likely to tangle if it is maintained significantly shorter than the other two. Based on the above method, to achieve varied thickness of braids the researcher tested with three individual strands of same thickness in a set of 0.5cm, 2cm, 2.5cm respectively which gave varied thickness for cotton

fabric (Figure 4.9). Single and pairing of threads were experimented with wool. Table 4.2 explains braiding experiments with different thickness of cotton and wool.

Figure 4.11 Examining braid thickness to ensure it is capable to bend and fill gaps (Author's own)

Figure 4.11 is an experiment with different thickness braids to make a simple Kolam pattern. This experiment gave the researcher an idea and feel of the thickness of braids to use for specific areas of the final artwork to be filled.

S.No.	Single strand thickness to make one braid	Result
1.	0.5cm (cotton) OR 1 strand (wool)	• Very thin braid, • Slightly longer braiding time due to thinness and protruding fibres, • Useful to make thin outlines or highlights and filling tiny gaps
2.	2cm (cotton) OR 2 strands (wool)	• Medium thickness braids, • Standard braiding time, • Useful to majorly for filling gaps
3.	2.5cm (cotton) OR 3 strands (wool)	• Thick braids, • Standard braiding time, • Useful to make the primary lines of the Kolam pattern.

Table 4.2 Braiding experiments with cotton and wool.

4.1.1.5 Determining the colour palette

Chromotherapy colours were preferred for the colour palette of this research artwork due to their proven psychological effects on wellbeing as discussed in the literature review of this paper. The researcher concluded that these colours would be apt aesthetically and capture the interest of the viewer when used with the right sequencing and combinations. This section explains how the colour selection process was executed. At this stage, the exact shade of the chosen colours was not determined as it could be done only after experimenting with various sequences of the pattern. However, the shades would have a slight variance from the chosen colours. The experiments were conducted with a single motif. Extremely detailed visualisation of the final artwork by the researcher was important at this stage.

S No.	Colour palette	Thickness of single strand of braid
1.	Cool palette- Jade green Cobalt blue Indigo Dove white	 1.5cm*3 1.5cm*3 2.5cm*3 0.5cm*3
2.	Warm palette- Lemon yellow Coral orange Cardinal red Dove white	 2.5cm*3 2.5cm*3 2.5cm*3 0.5cm*3
3.	Mixed palette- Cardinal red Coral orange Indigo Jade green	 0.5cm*3 1.5cm*3 2.5cm*3 1.5cm*3

Table 4.3 Colour palette combinations and thickness of braids used for each.

For the experiment with cotton braids, various combinations of colours including Jade green, Cobalt blue, Indigo, Dove white, Lemon yellow, Coral orange and Cardinal red were used. Once the braids were ready and dyed, three colour palettes combinations from the chosen chromotherapy colours were derived as in table 4.3.

Figure 4.12 Cool colour palette Kolam sample. (Author's own)

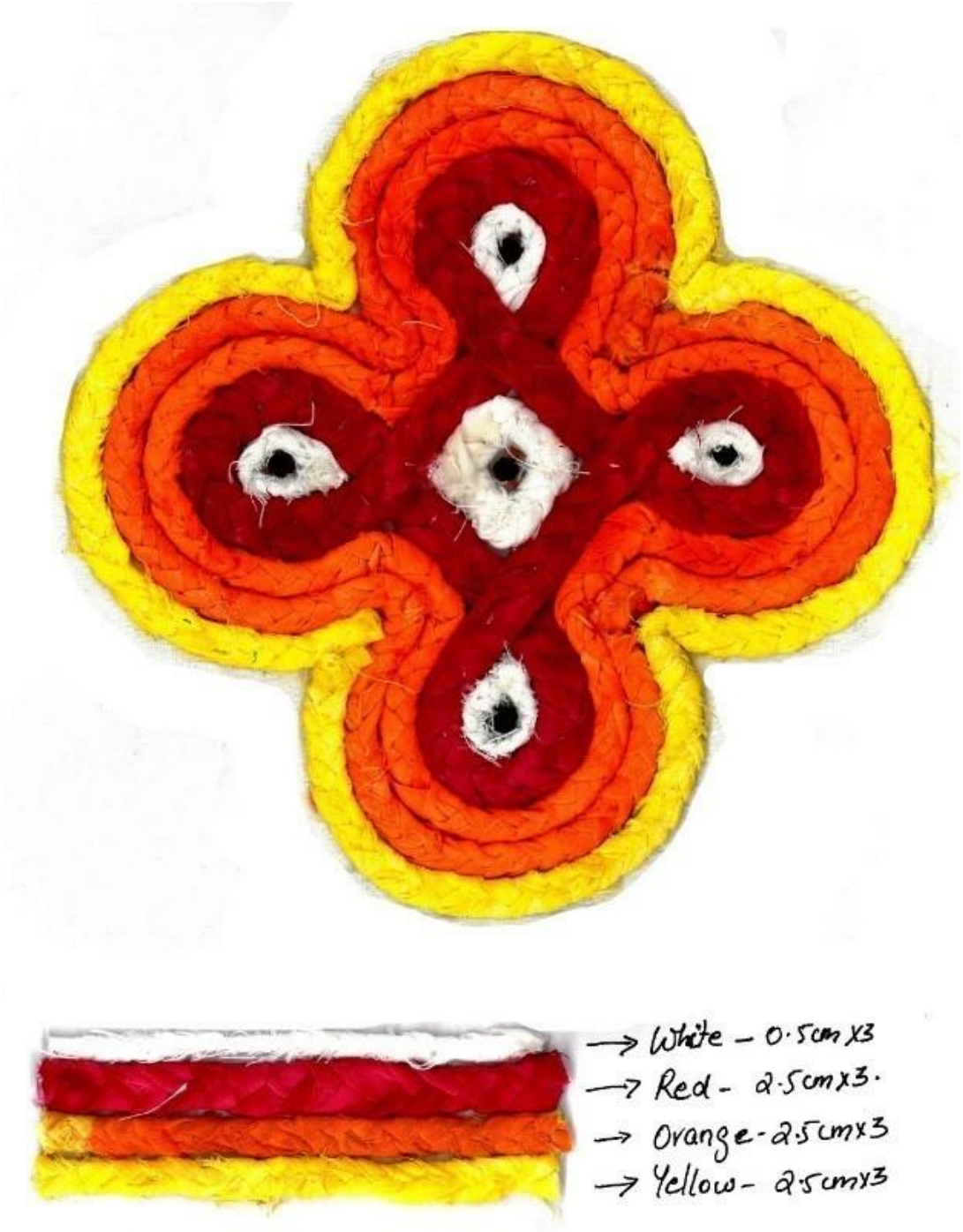


Figure 4.13 Warm colour palette Kolam sample. (Author's own)

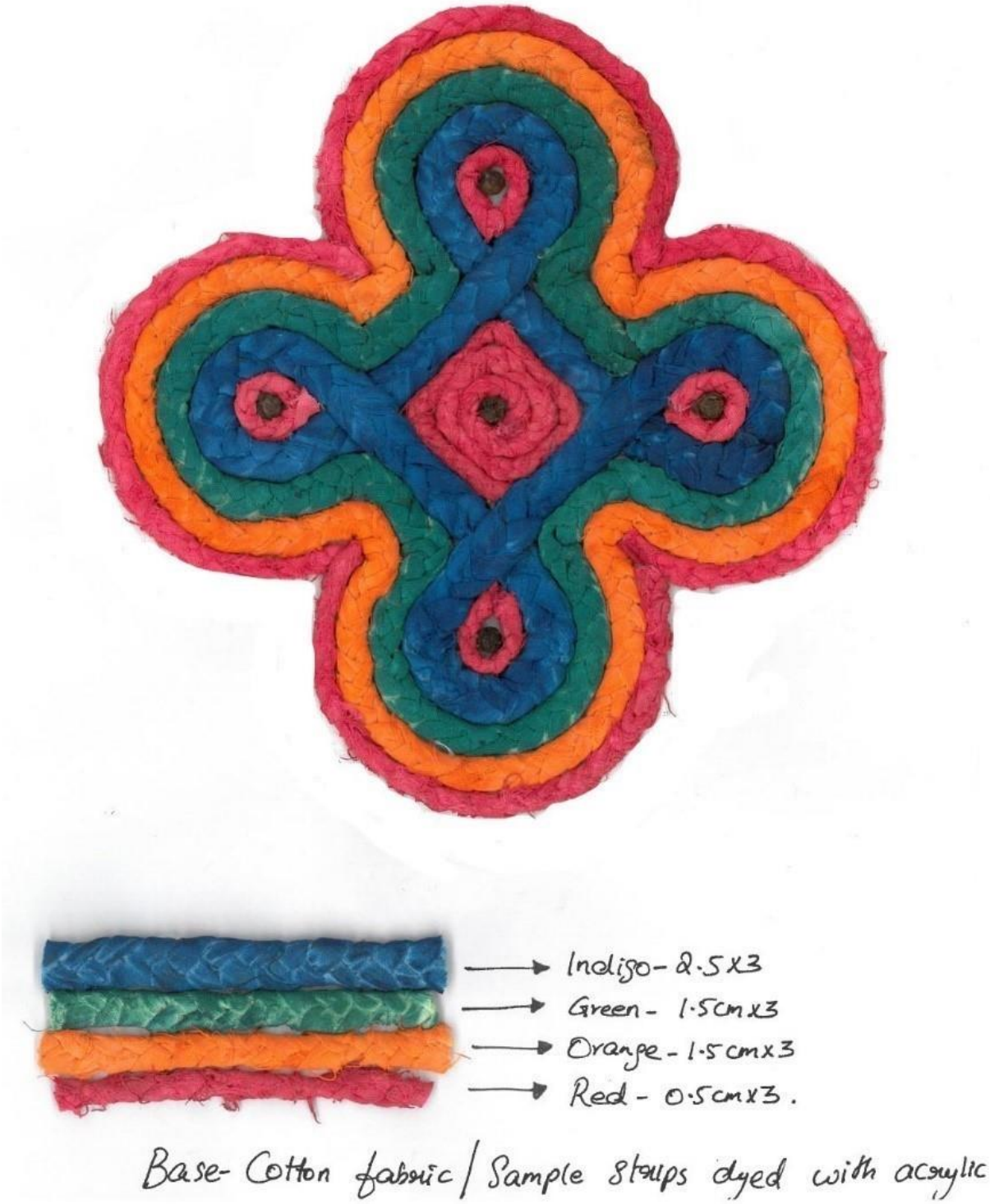


Figure 4.14 Mixed colour palette Kolam sample. (Author's own)

All the three combinations included black dots which was very important to highlight the beauty of the Kolam and act as a guideline for the observer to focus and follow the main pattern. The researcher was very keen on using the darkest colour of the palette for the main Kolam pattern and the rest followed intuitively, keeping in mind to highlight the Kolam and the rest of the filling was only to support the main pattern. Once experiments were done with different palettes, the mixed palette, was employed for both the prototype artwork and the final textile art piece as it was the most appealing sequencing of the three. Moreover, as the final Kolam artwork had to be displayed in a variety of settings, the colours had to appeal to a majority of the public and not be biased towards being too bright or too dull which might appeal only to a few audiences.

4.1.1.6 Determining braid length and attaching.

To make a continuous pattern with braids with a precision finish, it was important to determine an approximate length of the braids and the joint between each braid had to be precise. For this, the researcher had to be mindful and experiment with few factors and techniques like braid length and attaching the braids.

For the prototype artwork, the length of braid to be used for the finished pattern was difficult to determine as the end-to-end length was extremely long and the pattern involved a lot of overlapping. The length of the strands had to be of decent size as making them too long would not help in to maintaining even tension and create tangles while plaiting, whereas shorter lengths would result in shortage of braids and too many joints in the artwork, which would be time-consuming and compensate the perfect finish for the artwork. On these bases, approximately one metre strands were cut and braided to move on to the dyeing process. Braids had to be attached to each other (Table 4.5) and to the base (Table 4.6). Both these processes with both cotton and wool are discussed in this section.

Braids were attached together either by sewing the ends or by gluing them together if only the joint was in an unseen spot. Sewing had to be done with same coloured thread as braids. Sewing and gluing with both materials were tested to examine which method would give the best finish.

Type of attachment with other braid	Wool	Cotton
Sewing	• Fluffy property of wool failed to give a precision finish at the sewn joints. (Figure 4.15) • Difficult to handle.	• Snipping of braid ends and sewing affected the thickness of the joint. • Easy sewing.
Gluing with super glue (The researcher worked in an open space and wore mask to avoid harmful fumes from the super glue)	• Impossible to glue due to several short fibres.	• Not possible to glue end to end but sewing each end separately and gluing without gaps between each other on the base is very effective. But this had to be done with precision without leaving gaps. (Figure 4.16)

Table 4.5 Results of various attachment methods of braids with each other.

Type of fastening method to base	Wool	Cotton
Sewing	• Had to be stitched at several points yet gave fluffy finish. • Difficult to handle for sewing method due to woollen's slippery properties.	• Had to be stitched at several points and resulted in a clean, flat finish without any protrusions of braids. (Figure 4.17a) • Easy to handle for sewing method due to cotton's non-slippery properties.
Gluing with super glue	• Effective after a few seconds of application.	• Very effective after application of few seconds.
Blu-tack	• Helpful only as a temporary attachment agent. (Figure 4.17b)	• Not required as gluing was effective.

Table 4.6 Results of various fastening methods of braids to base.

(a) (b)

Figure 4.15 Sample Kolam making by sewing woollen braids to base (a).

Yellow circles in close up showing elevated spots at braid joints (b) (Author's own)

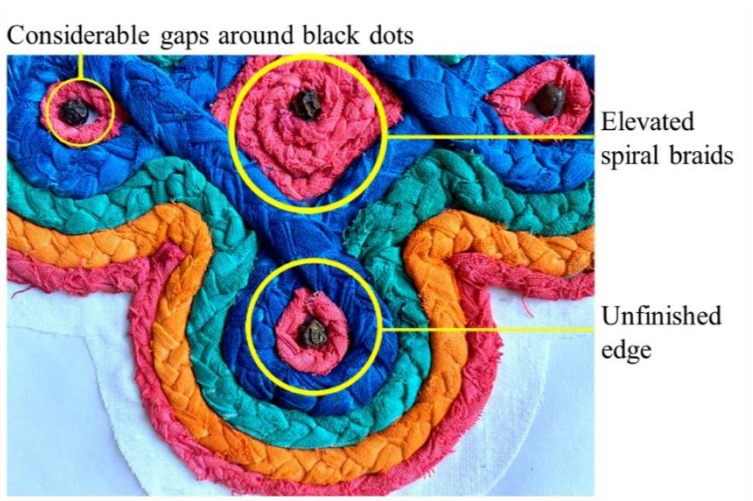


Figure 4.16 Defects spotted while make the Kolam pattern using cotton braids. (Author's own)

(a) (b)

Figure 4.17 Sewing interlocking placements among three ed braids on cloth base (a), Fastening braided sample pattern with blue tack on painted canvas (c). (Author's photograph)

All these experiments were done on a small scale for both wool and cotton as both were to be used for the prototype and the final artwork respectively. Observations as per table 4.5 and table 4.6 were considered and reconsidered for both the artworks.

4.1.1.7 Background texture

After experimenting with a variety of braiding and attachment methods to form the Kolam pattern with braids, the researcher began analysing the best backdrop textures for the prototype artwork. As observed in the previous section, canvas and cloth were both used as base as only these were readily available. The quantity of cotton cloth was a limitation, so it couldn't be used for the as a base. On the other hand, canvas was easily available, readymade with frame and hence gave sturdiness, making it easier to attach the braids.

Due to the small size of this sample canvas (25cm*20cm), the approximate length of one strip of cotton fabric was measured, and 1.5 times the estimated length of four strips of width 2.5cm were

braided this time. Most of it covered the sides of the canvas, whereas the bottom half was tested without covering the sides (Figure 4.18). When comparing the painted canvas's covered and uncovered sides, the former produced a neat and acceptable result, whilst the latter did not.

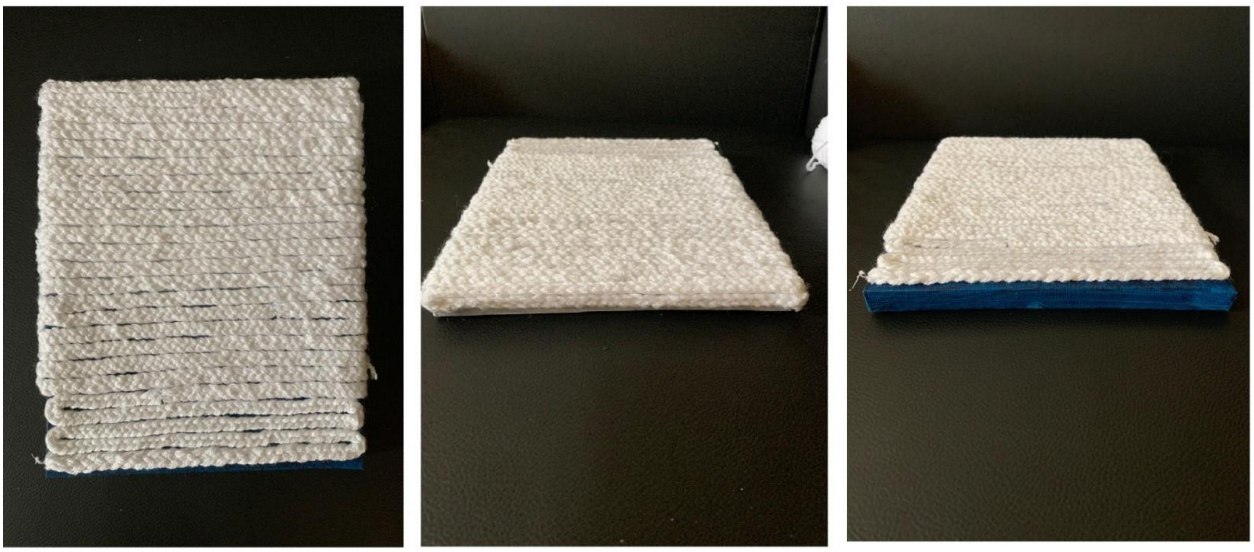


Figure 4.18 Canvas completely covered with 4 strand braided white cotton fabric. View from all three sides (Author's own)

There were a lot of considerations at this stage regarding two different ways to present the prototype artwork.

Method 1: To show the entire Kolam artwork, place different coloured and mixed thickness braids side by side with respect to the sketch on canvas.

Method 2: Covering the background with braids placed tightly adjacent to each other and stitching the braided coloured Kolam pattern over it that was previously prepared (Figure 4.20).

Finally, method 1 was chosen because of its coverage and capacity to incorporate the palette's s in a unique way.

Figure 4.19 Kolam pattern white on coloured canvas (Author's own)

Figure 4.20 Coloured Kolam pattern on white plaited background (Author's own)

4.1.2 Stage 2: Prototype artwork

Prototype artworks are useful as ‘dress rehearsals’ for research projects, enabling approaches and methods to be tested mentions Blackman (2014). An opportunity to create a prototype arose while discussing with the supervisor. This allowed the researcher to test the planned artwork and possibly gain a better grasp of how to put the final artwork together and permitted for the use of all observational evidence into the primary study. Moreover, the prototype artwork was used as a reference and guideline to create the final artwork and was not used for the final display.

4.1.2.1 Sketching the artwork

A 50cm*60cm canvas was chosen as the base for the prototype artwork. On squared paper, a sketch was drawn. According to the rules of Kolam grammar, the core Kolam pattern required the dots to be positioned equidistant from each other to achieve a symmetrical pattern, for which the researcher found square paper to be useful. The square paper served as a grid to guide the Kolam drawing. The central Kolam pattern was drawn after the dots were set, followed by the border pattern. Dots were an integral part of the Kolam as they provided a guideline for the lines to travel around it and made the Kolam visually complete. Dots were also important to highlight the main Kolam pattern from the rest of the artwork.

One of the researcher's main concerns when creating the dots and sequence of the artwork, was to draw attention to the main focal pattern. This could be accomplished using three methods. First method involved experimenting with dots and colours from the chosen colour palette by placing dots only for the main Kolam pattern, followed by highlighting the main pattern with a colour that is darker than the rest of the artwork and thirdly by playing down the colours of the rest of the artwork's features so as not to distract from the core pattern, allowing for a clear viewing experience. For these purposes, it was decided to use indigo braids and dots to highlight the primary Kolam pattern of the artwork since it was the darkest in the chosen palette. The main indigo design was then highlighted with a layer of lime green around it. This cool colour was followed by a subtle coral orange allowing a smooth transition from cool to warmer tones.

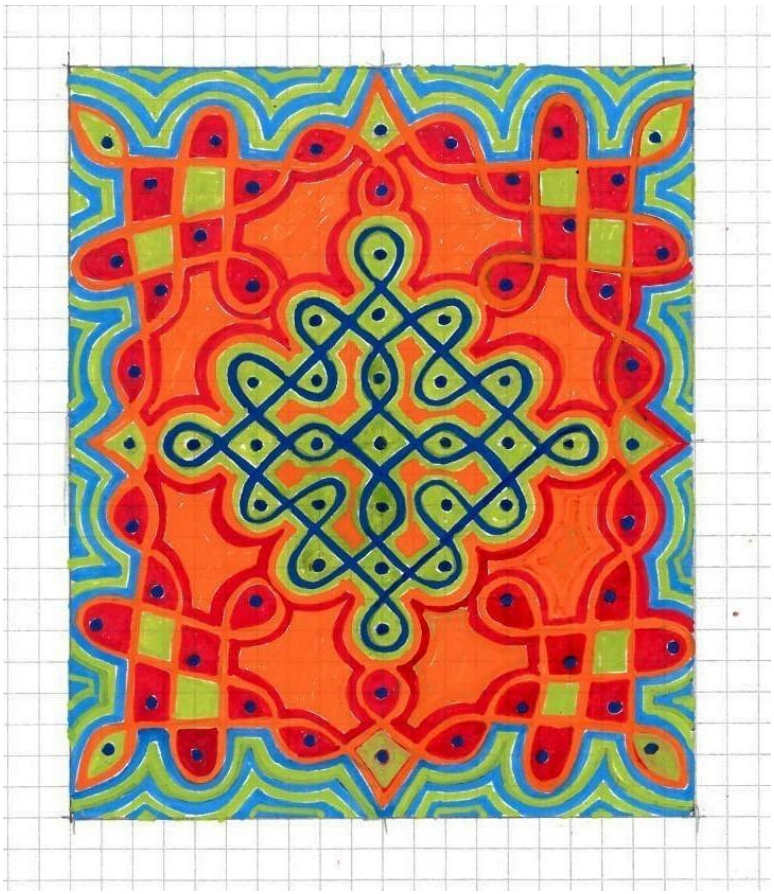


Figure 4.21 Prototype artwork sketch. (Author's own)

Following this was a brighter, warmer cardinal red, which helped to emphasise the main indigo blue pattern furthermore. Cardinal red, followed by coral orange, and then lime green were used in the border pattern too give a contrast with the main Kolam. For the background, cobalt blue and lime green were alternately filled. Figure 4.21 shows the prototype artwork sketch which was an outcome of the above studies and experiments, which displays a brilliant balance of colours and design placement.

4.1.2.2 Yarn type and dyeing

As discussed earlier, the prototype artwork was constructed with the available materials to the researcher like ready-made canvas, woollen threads, acrylic and water paints as the researcher were not able to source similar materials of the final artwork due to the Covid-19 pandemic. Plaiting process succeeding dyeing, was the most time-consuming and an ongoing process

throughout the artmaking as the length of the braid for each could not be exactly determined due to the irregular shapes of the filling areas.

S.No.	Single strand thickness to make one braid	Colour of braid
1.	1 strand wool *3	Lime green
2.	2 strands wool *3	Coral orange, Cardinal red, Cobalt blue
3.	3 strands wool *3	Indigo

Table 4.7 Braiding experiments with cotton and wool.

Small pieces of blue tack were afterwards marked as dots, and woollen strands were utilised to create the Kolam pattern. These dots were placed based on the initial sketch. It would have been extremely difficult without the dots as guidance to make the pattern. The sketch served as a reference during the process. Next, a pencil marking of the main pattern was drawn. Rather than sewing, the braids were tried to affix to the base with a strong adhesive, as opposed to the previous trials, along the pencil markings.

Figure 4.22 Blu tack was used for marking the dots and making the pattern with braided wool around it. (Author's own)

Using an adhesive benefitted the artwork generation due to ease without disrupting the base or the already established pattern. It was also fast drying allowing the procedure to go more swiftly.

The blue-tack was removed when the main Kolam design (indigo and coral orange) was completed, and the rest was completed according to the basic sketch. To fill areas of various sizes, various gluing methods were investigated. The size of the space to be filled was classified as small if it was less than six centimetres in width or height, and larger if it was more than six centimetres.

4.1.2.3 Gap filling methods

Once the main Kolam pattern was fixed, it formed gaps of various sizes and shapes due to the loops of the main pattern. These gaps had to be filled to complete the final artwork. Keeping the primary patterns as the guideline, the rest of the sequencing followed. According to the researcher, the filling methods were divided into two categories depending on the gap size and shape into spiral and row methods.

Areas of various sizes and shapes were filled with braids in a spiral method. Based on the initial paper sketch, the area to be covered and intuitively, the thickness of the braids was selected. The braids were glued starting from one point, at one of the right-angled corners, and then spiralled towards the centre to fill the rest of the area for the spiral method. The braid was tightly fastened with extra super glue and all the excess was clipped off once the entire section had been covered. Figure 4.23 shows sample of the gaps covered by this method.

Within the row strategy, like the spiral method, it was tried for both small and big regions. The larger regions were all abstract and displayed very interesting patterns when filled in, as compared to the little areas, which were all closed U shapes, triangles, tear drop shapes, tapering oval shapes, and rhombuses. This method's ability to work in several angles and directions were also investigated. Interestingly, this method produced ripple like effect which looked visually organised and very appealing.

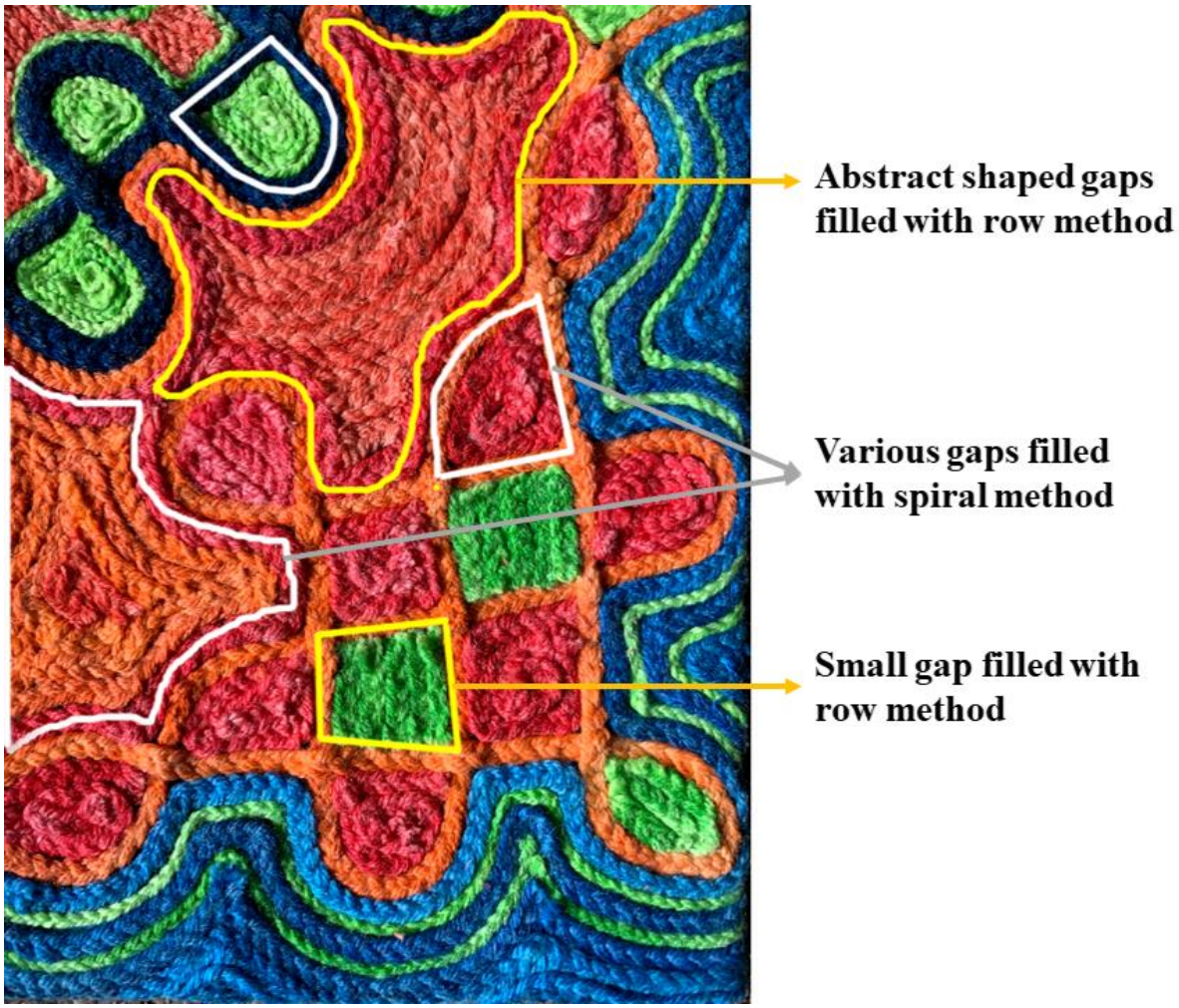


Figure 4.23 Close ups of different parts of artwork showcasing different filling methods. (Author's own)

Next, 71 little circular patches of indigo dyed fabric, each measuring 1cm in diameter, were cut for the dots. They were glued on the Kolam pattern using the initial sketch as a guide. As the dots were an integral part of the final artwork and gave a complete look, the dots were added once the main pattern and the gaps were filled.

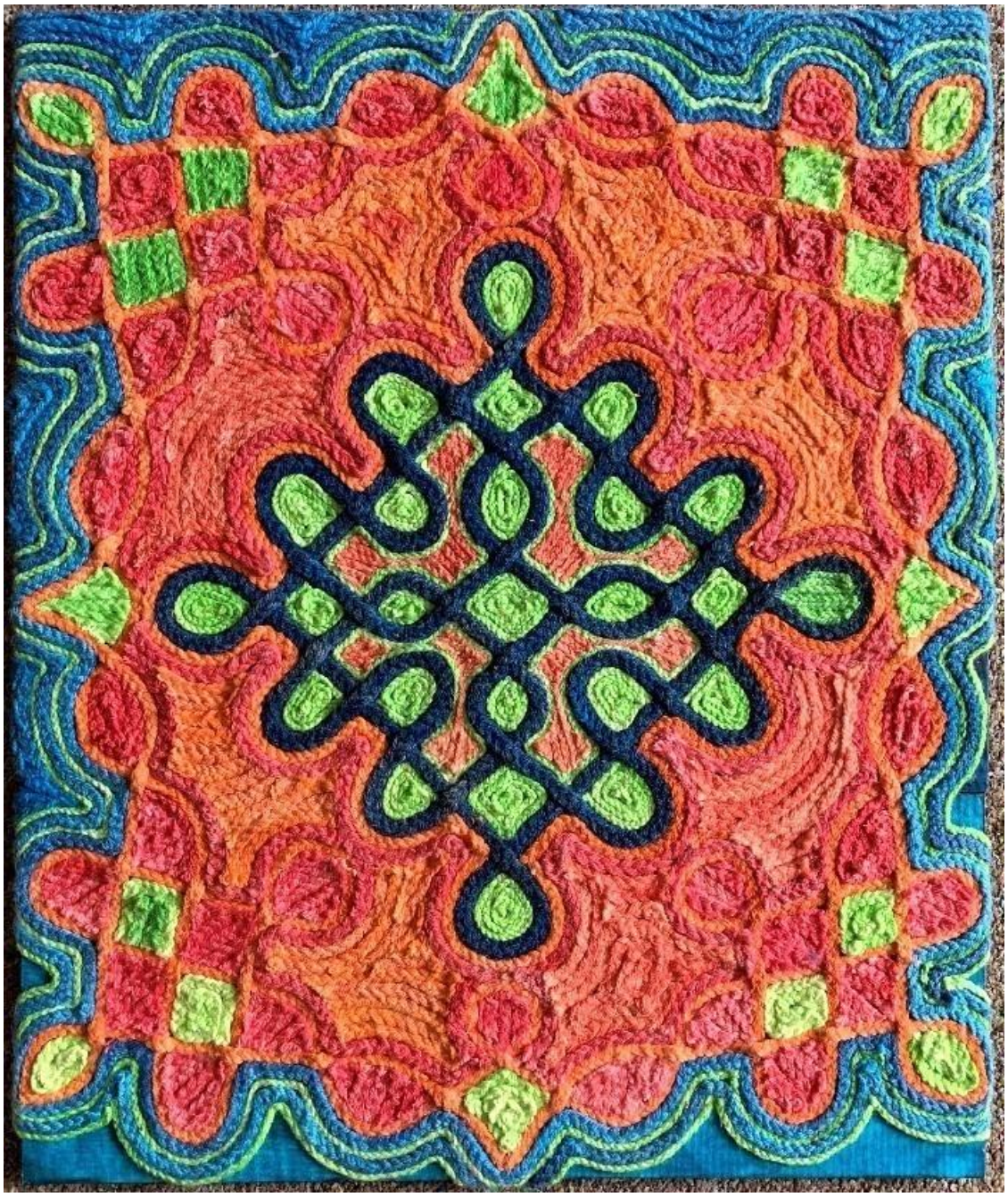


Figure 4.24 Prototype artwork in progress (without dots) (Author's own)

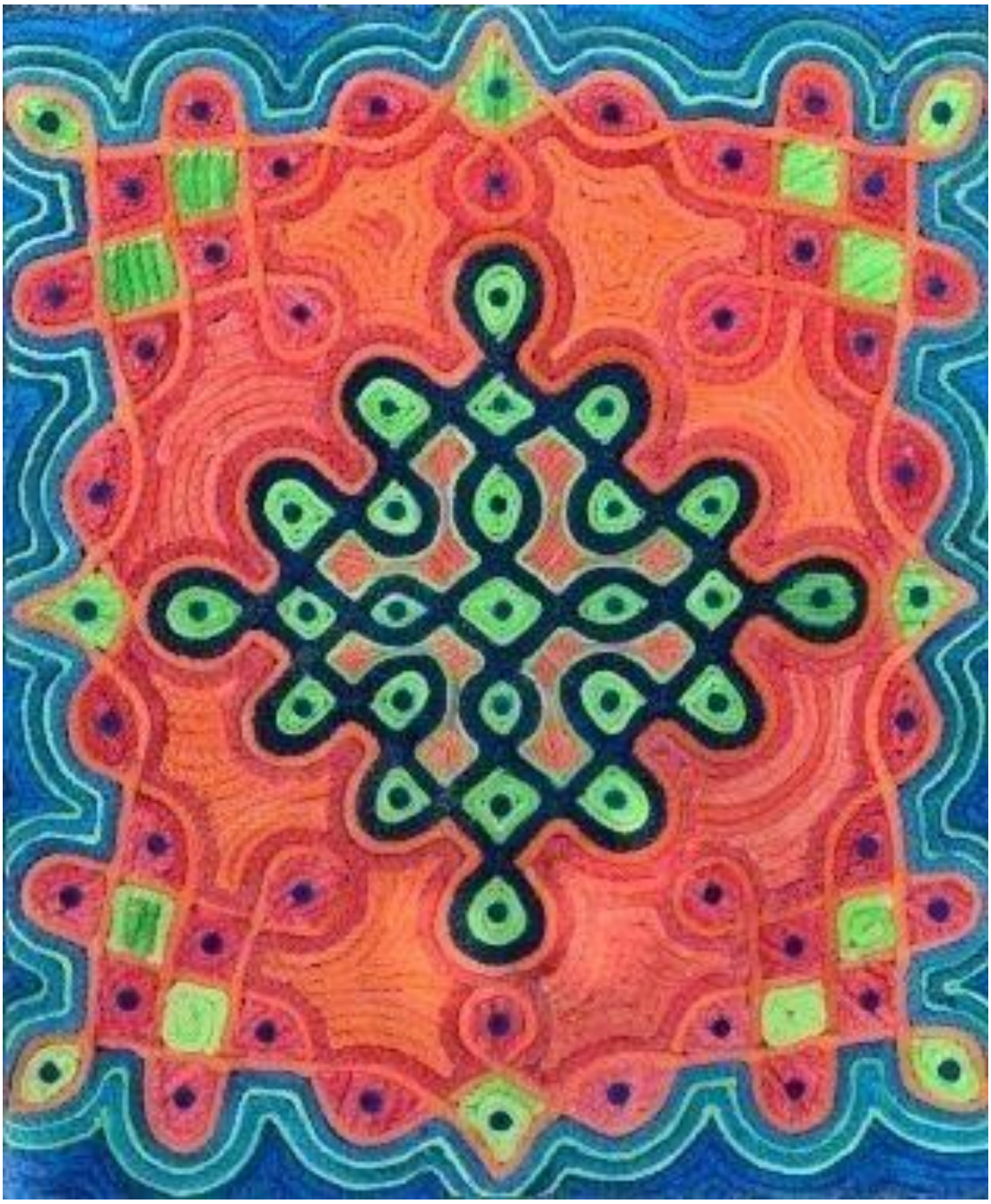


Figure 4.25 Final prototype artwork. (Author's own)

4.1.2.4 Observations and conclusions of prototype artwork

The following observations and conclusions of the prototype artwork making helped the researcher identify the benefits and drawbacks of the artwork making process, which in turn helped complete the final artwork more efficiently.

Observations	Conclusions
• The woollen braids did not absorb the colours properly, leaving the artwork with a dreary appearance. • Although woollen strands were simple to braid, the length of the strands, combined with their smooth texture, made braiding challenging. • The suppleness of the woollen braids made it easier to bend them into curves, but excessive pulling reduced the braid's thickness. • The spiral method produced lumps and gaps between the braids, but the row method produced a perfect finish with neatly trimmed edges. • In comparison to the other orientations and spiral method, the row method appeared best when it was bonded in a radial direction, which gave the artwork a lot of visual movement. The spiral approach gave the artwork a stagnant appearance. • The dots appeared to be very shallow, and the glue showed up through them, compromising on the finish.	• Gluing the braids with a strong glue, as it dried quickly and was easy to work with. • The indigo dots to be incorporated into the design. • Gluing the yarns in a radial manner to give the artwork additional dimension. • Dyeing the required length of fabric before braiding was a good practice. • Cotton thread was chosen over woollen yarn because of its non-slippery properties, ease of braiding, and brightness. Low elastic recovery allows it to bend over corners without losing its width.

Table 4.8 Observations and conclusions of the prototype artwork making.

These conclusions gave a deep insight into how to make the final artwork. Now, the researcher had a better understanding of what size, material, and design approach to have towards the final

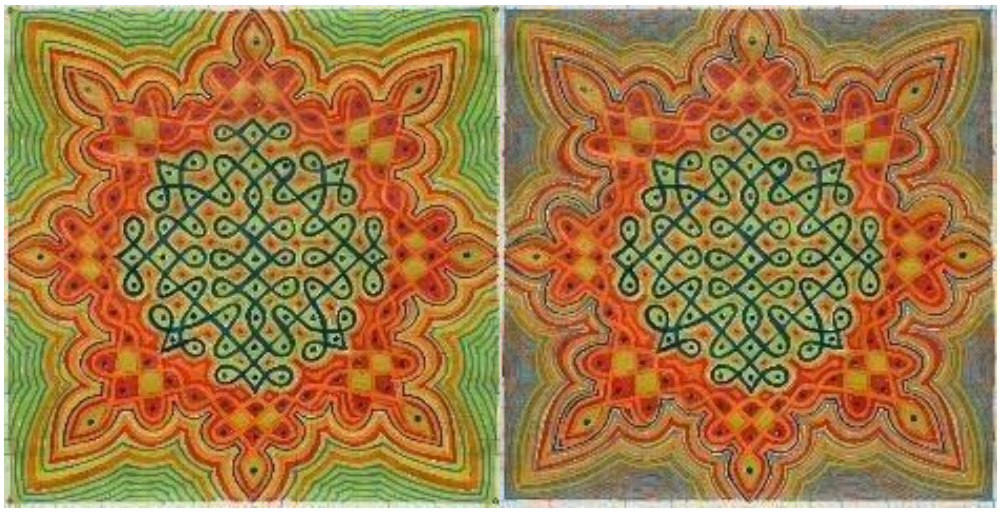
textile artwork. The following section elaborates on the making process of the final handmade textile art piece.

4.1.3 Stage 3: Final handmade artwork

Once the prototype artwork was completed, based on its observations and conclusions, the following methods were employed to construct the final textile art piece.

4.1.3.1 Making the paper drawing

(a) (b)



(c) (d)

Figure 4.26 Experiments of the final artwork sketch on paper with various background combinations. (Author's own)

It is often easier to create artwork based on a paper pattern. The plan was drawn up using 5mm squared high-quality paper. Multiple design combinations were experimented. However, out of the four combinations, figure 4.26(a) was chosen for its cool coloured background and its contrast with the warm colours which dominated the secondary Kolam pattern. Moreover, the background blue complimented very well with the central indigo main pattern, which not only gave a continuity to the artwork but also gave a visual balance. The other three background options were either too bright or neutral or dull when compared with the main pattern. Hence this was an easy choice for the researcher.

4.1.3.2 Method of dyeing

As it was decided that the dip dyed approach using acrylics was not appropriate because of the uneven finish, further dyeing experiments were completed using Remazol dyes.

The artwork was made from 100% cotton handwoven material. A burn test was conducted to confirm the same. These tints and shades of the chosen colour palette were an instant choice for the researcher. The colours from the prototype artwork were then matched to sample swatches in the University's Printing lab. After colour matching with spectrophotometer, data was compiled for the exact colour match for the Cotton -R60-Remazol Printing for each colour through Data Colour (D65) software. To obtain each hue of the chosen palette, the recipes in Table 4.9 were used. After the cloth had been coloured and processed, it was cut into strips and braided with the following thicknesses, depending on the area to be covered and how far the respective pattern needed to be accentuated. As stated earlier, the size of the strips of fabrics impacted the size of the braiding.

Sno.	Dye stuff (for length of cloth used)	Indigo	Brilliant Blue	Cardinal Red	Coral Orange	Lime Green
1	Length of cloth to be dyed (in metre)	1m	2m	2m	2m	2m
2	Remazol Yellow 4GL	-	2.034g	6.138g	26.32g	17.286g
3	Remazol Brilliant Blue BB	-	-	-	-	-
4	Remazol Black B	7.738g	-	0.088g	-	0.858g
5	Remazol Turquoise blue G	-	12.332g	-	-	-
6	Remazol Brilliant violet 5R	-	2.7g	-	-	-
7	Remazol Red BB	0.703g	-	8.93g	3.362g	-
8	Sodium Bicarbonate	25g	50g	50g	50g	50g

Table 4.9 Values for Cotton -R60-Remazol Printing through Data (D65)

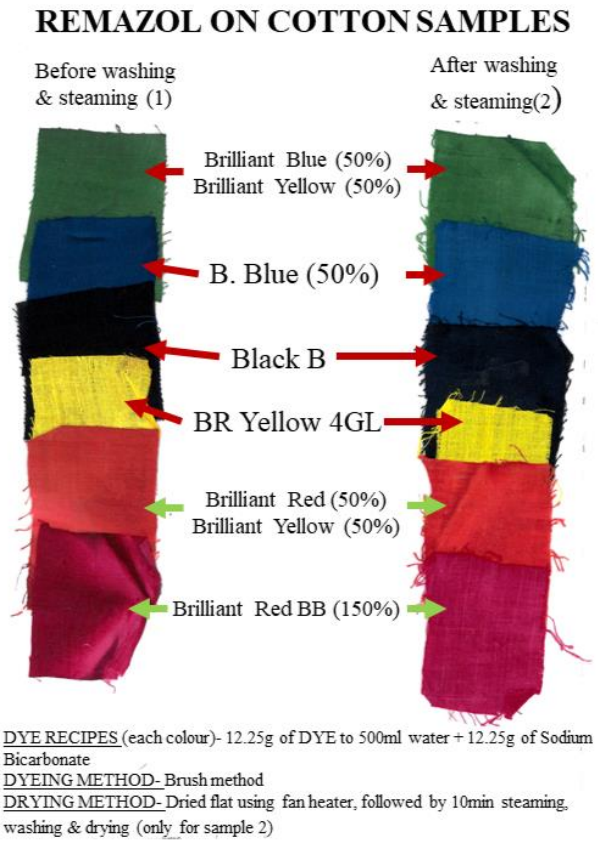


Figure 4.27 Sample Remazol dyed cloth before and after steaming and washing (Author's own)

Figure 4.28 Remazol dyed cloth for artwork. From left to right- lime green, coral orange, cardinal red, cobalt blue and indigo (Author's own)

S.No.	Colours	Thickness of single strand	Placement on the artwork
1	Indigo	2cm	Thickest of all the braids used for main Kolam pattern.
2	Cobalt blue	1.5cm	Medium thickness braids used for filling background.
3	Cardinal Red	1.5cm	Medium thickness braids used for filling gaps.
4	Coral Orange	1cm 1.5cm	Thinnest braids used for highlighting main Kolam pattern. Medium thickness braids used for filling secondary border pattern and parts of background gaps.
5	Lime Green	1cm	Thinnest braids used for highlighting main Kolam pattern.

Table 4.10 Thickness and placement on artwork of different coloured braids.

It was the researcher's general rule that the main Kolam pattern would have the thickest and darkest braid, the thinnest strips would either be used to fill very small areas, like the areas inside the Kolam loops or be useful for highlighting any portion of the artwork. The medium thickness braids would be used to fill most of the larger abstract gaps and the secondary border Kolam pattern arising from the finished primary and secondary Kolam patterns.

Apart from this, 125 small indigo dots or buttons were made by cutting small circular pieces of cloth measuring the size of a penny, stuffed with cotton and secured with same thread. The excess cloth was then trimmed off to make a button or dots and ensured that they were flat at the bottom for easy adherence to the base board.

4.1.3.3 Constructing the final art piece

Once all the required materials were ready, the researcher started the final artwork process. Initially, a 2ft-by-2ft plywood base was cut and the Kolam design from the sketch (Figure 4.30) was drawn on it using the grid method, which aided in scaling up and marking the dots and lines in a precise manner. This was a very important initial step for building up the artwork.

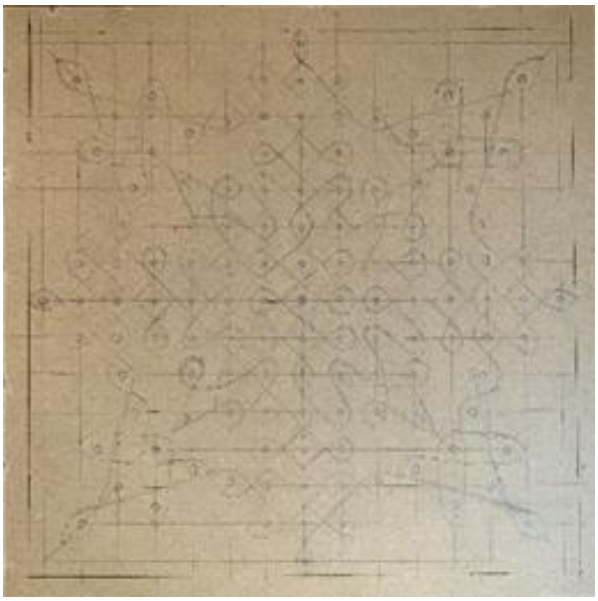


Figure 4.30 Initial grid and sketch of the central Kolam pattern. (Author's own)

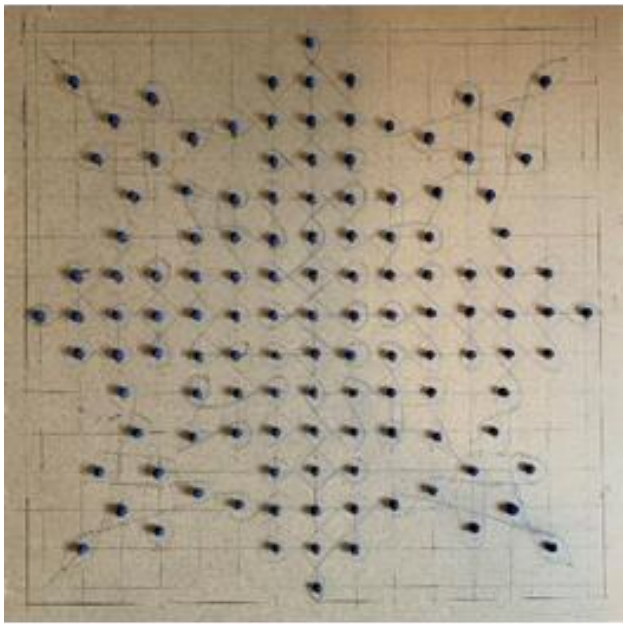


Figure 4.31 Indigo dots glued and secured on marked spots of artwork base. (Author's own)

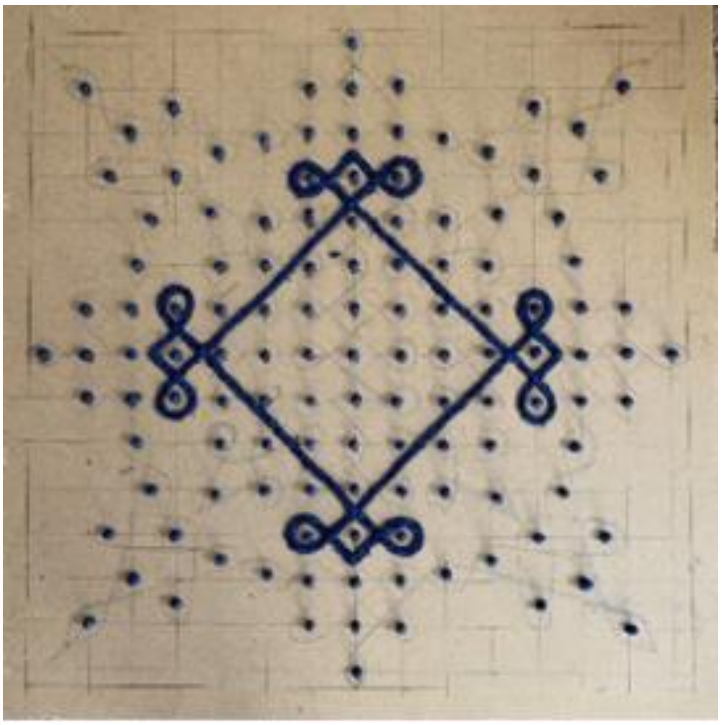


Figure 4.32 Building the main Kolam pattern with indigo braid. (Author's own)

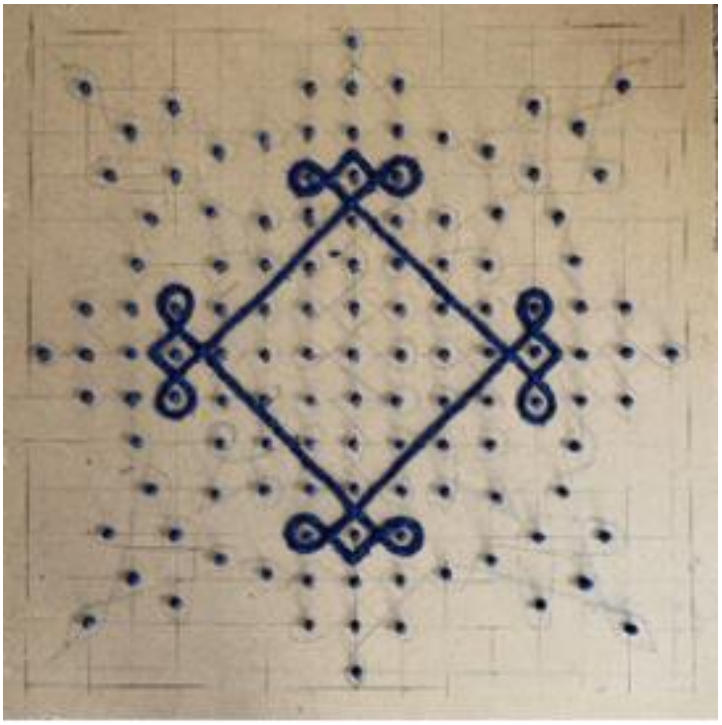


Figure 4.33 Artwork in progress. (Author's own)

Figure 4.34 Further building up of the artwork. (Author's own)

Once the sketch was drawn, it was time to place the indigo dots carefully on top of the markings on the base, as shown in figure 4.31 and fixed using super glue. Apart from ensuring that the smooth side of each dot was facing upwards, this step was crucial because once the threads were glued around the dots, it would be impossible to replace the dots if they fell off during the later stages. This would have distorted the shape of the dots or cause the thread around that spot to unravel, resulting in an awkward finish. After a few minutes, the dots were double-checked for bonding with the artboard, and the researcher began gluing the main pattern with indigo braids on the central Kolam pattern, figure 4.32. The starting point of the braid was decided to be at a point that would be overlapped later during the pattern's completion to provide a precision finish. Once the main Kolam was completed, the border orange Kolam pattern around it followed making gaps for other coloured braids in between using the same method figure 4.33. The pattern emerged gradually but steadily. It was ensured at every point of making the artwork that the braids and dots were secure, the placement of braids followed the sequence of initial sketch, the edges were snipped or joined with precision and the small gaps were filled in a radial direction to make focus the viewer's attention on the main pattern.

For the finishing touches, the excess threads were snipped and the braids around the dots were pushed down further. Surplus cotton fibres were cleaned off. Next, the textile artwork was framed with a white picture box frame to further enhance the art piece. The back was secured with screws and tape.

Figure 4.35 Framed final artwork. (Author's own)

The researcher was extremely happy with the final Kolam textile artwork's outcome as it was an exact replica of the intended final sketch. It included appeal, understanding, and retention which a traditional Kolam showcases. The observations and conclusions of the prototype artwork helped achieving this precision finish at many stages. The cotton braids helped result in a clean and solid finish, the right sequencing highlighted the primary pattern and played down on the background yet complemented each other, reactive dyes gave vibrancy to the artwork and plaiting gave a very detailed workmanship to the artwork. Even though little cotton fibres protruded from the completed artwork, it provided the observer the impression of an original handmade piece. The artwork was of a size that made transportation and installation a breeze. It was also simple to convert to a digital file and produce an output that was strikingly similar to the handcrafted artwork.

4.1.4 Stage 4: Final digital artwork

After the handmade artwork was finished, a photo of it was taken to order a digital version from www.supersizeprint.co.uk. Photographing the artwork was a challenge as the replica had to be accurate with the original artwork, especially the colours which had to be the closest match. Photographs were tried at different angles, spots, and lighting to achieve the perfect result.

Placing the digital artwork besides the handmade art was extremely essential as it gave scope for comparison between the two and hence contributed to a more effective research methodology as opposed to displaying only the latter, which would have not allowed the investigation to explore through various perspectives into the topic. The comparison could justify having the textile piece made and the attention to detail it provides. With a 2cm depth, extended artwork print to the sides, the artboard was made of lightweight Ecobloc which was a planet friendly canvas alternative, and the size was 2 feet by 2 feet (Figure 4.36).

The researcher was quite pleased with the digital artwork's outcome because the details was an exact duplicate of the handmade Kolam cloth artwork. Moreover, it was very lightweight, high resolution, and a close colour match to the handmade artwork. Hence, as planned by the researcher, this was a very efficient subject for the comparative active research.

Figure 4.36 Digital replica of handmade Kolam textile artwork. (Author's own)

4.2 Exhibition set up

The researcher decided to exhibit two artworks for a standard display set up at all venues. Both the original handmade textile artwork and the digital replica of the handmade artwork were exhibited. These were displayed next to each other at same levels and labelled A and B, respectively. An A3 size poster was presented with a two-liner describing Kolam patterns and a QR code (see appendix 5) at all the venues. The QR code when scanned on a viewer's mobile phone, redirected the participant to the research online survey.

4.3 Active research

For active research, several establishments in the healthcare and public settings like hospices, hospitals, care homes, cafes, community centres, libraries, museums, creative art spaces were contacted through e-mail to acquire permission for display. The display time was fixed within two months from 1st October 2021 to 30th November 2021. Four venues were finalised. Table 4.11 shows the details of the active research exhibit that were confirmed.

S.No	Venue	Location of display	Display duration	Method of display	Questionnaire Format
1.	Barbara Hepworth building, University if Huddersfield	Mezzanine floor,	06/10/2021- 15/10/2021	Wall installation	QR code
2.	Leeds art library, Leeds	Library floor	18/10/2021- 25/10/2021	Easel display	QR code and manual forms
3.	Left bank café, Leeds	Cafe	01/11/2021- 12/11/2021	Wall installation	QR code
4.	Sue Ryder hospice ,Headingley, Leeds	Visitor's waiting room	15/11/2021- 30/11/2021	Wall installation	QR code and manual forms

Table 4.11 Details of active research.

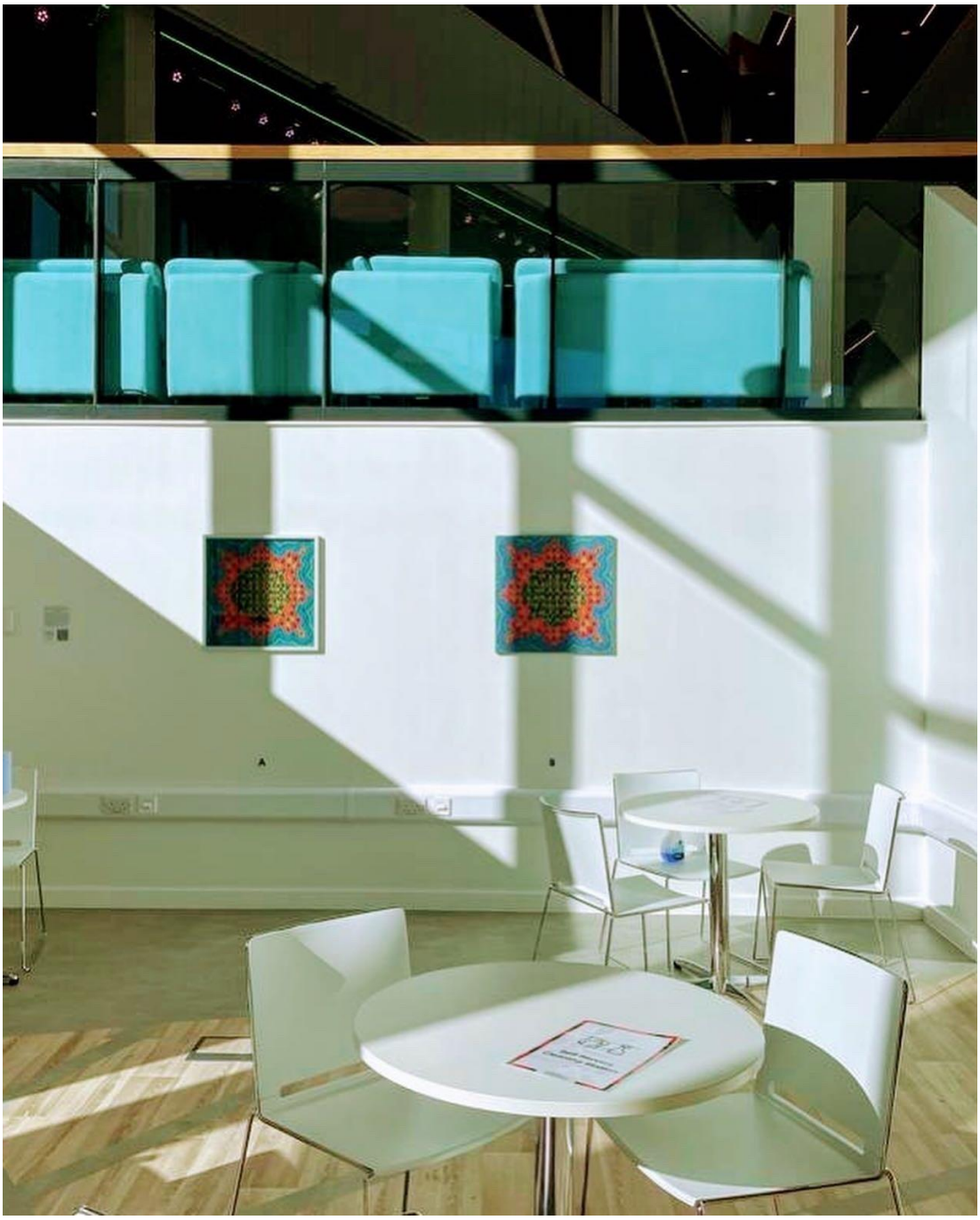


Figure 4.37 Active research exhibit at Barbara Hepworth building, University of Huddersfield. (Author's own)

Figure 4.38 Active research exhibit at Art library, Leeds. (Author's own)

Figure 4.39 Active research exhibit at Left bank cafe, Leeds. (Author's own)

Figure 4.40 Active research exhibit at Sue Ryder hospice, Leeds (Author's own)

4.4 Reflections of active research

The above sections attempted to discuss the empirical research process for this study in a reflective and critical manner. In social research, it was critical to consider and be mindful of the social identity and background of the individual researcher, as well as how this could affect the research. Ahern (1999, p. 408) quotes that 'the ability to put aside personal feelings and preconceptions is more a function of how reflexive one is rather than how objective one is'.

This section examines the researcher's impact on the research process. Prior to this study, the researcher had not worked in such a variety of settings for a similar purpose. In addition, being an international student, the researcher found it very interesting to visit, convince and finalise the venues. Although the Covid-19 pandemic was a huge challenge, the authorities of all the venues, welcomed the active research proposal as something very new and important for the community. This also gave opportunities to conduct Kolam workshops, give talks about Kolam and make live Kolam art at few venues (Table 4.12). The researcher felt extremely encouraged by these experiences.

S.No.	Type of activity	Date of activity	Venue	Age group
1.	Kolam workshop for Sangam Festival. (Appendix 10)	26/07/2021	Piazza Shopping centre, Huddersfield	7+
2.	Huddersfield Kolam art for Huddersfield Heritage Action Zone. (Appendix 11)	16/10/2021	Byram Arcade, Huddersfield	Open to public.
3.	Kolam presentation and workshop. (Appendix 12)	25/10/2021	Leeds Art Library, Leeds	18+

Table 4.12. Kolam workshops conducted as a part of the active research.

These Kolam workshops enabled the researcher to introduce the audience to the cultural, technical, mathematical and appreciate the intricacies and aesthetics of Kolam art. The workshops not only

helped to reach a wider audience but also aided in observing the participants' level of focus and involvement with the pattern. Moreover, it was interesting to note the multiple approaches the public had to complete a similar, simple Kolam pattern. This gave the researcher an insight of how the viewer might approach the pattern of the final textile Kolam artwork.

On the other hand, the prototype artwork was extremely useful in navigating the anticipated and unanticipated risks that arose throughout the creation of the final textile art piece. It was effective in giving the researcher more confidence as well as deciding that when the benefits and cons of the artwork and its working process were evaluated, it made the process of creating the final art piece easier and more pleasurable in many ways. In addition, the prototype artwork saved a lot of time during the final artwork planning phase.

Next, there was some scepticism about whether the researcher would be able to complete the empirical tasks intended, particularly the survey. It not only raised questions and problems that needed to be considered for the study, but it also allowed her to sharpen and enhance her research skills. Although the investigator had never done a survey or an interview before, she made certain that she had all the necessary supporting information and technical skills for the active investigation.

Because this study used a comparison methodology of artworks, rather than focusing on a particular piece of art, the findings may increase the validity of the findings. Comparing two identical artworks in different mediums gave the participant more possibilities for better understanding the artworks. Furthermore, comparing the two artworks lent greater value to the favoured artwork. It further engaged the spectator, assisting them in selecting the best with a reason. This conscious participant decision assisted the researcher in determining whether the study questions, as well as technical and aesthetic issues, were addressed during the artmaking process.

4.5 Summary

The artwork process was divided to five stages which included planning for the overall artworks which helped to experiment and decide on numerous artwork elements like the size of artwork, type of Kolam, plaiting, colour sampling, colour palette, determining braid length and joining,

binding method and background texture and the respective considerations to make the final artwork. It was important to answer the research questions, be mindful of both the technical considerations and aesthetics of the final artwork during this planning stage. The second stage elucidated the prototype artwork process, followed by the final artwork process and lastly it was about the digital artwork process. All the studies and experiments helped the researcher to successfully create a final Kolam textile art piece which included wellbeing Kolam patterns, healing chromotherapy colours and rhythmic plaiting techniques. Four venues were confirmed for the final display, and this was succeeded by the exhibit in the venues which helped to collate responses from the participants through questionnaires.

Chapter 5: Research findings

5.1 Introduction

This research compares the influence of a handmade therapeutic Kolam textile artwork to a digital reproduction of the same, as well as their contribution to wellbeing. The researcher conducted a literature and practice review on visual arts, Kolam, and textile art in healthcare and public settings for this study. The optimum arrangement for the textile art piece was determined based on the findings of the research perceptions of colour and Kolam pattern, which resulted in one handmade Kolam textile art piece and one digital replication were constructed to prove the effectiveness of either one or both in public/healthcare settings. The artworks were exhibited in a variety of locations for comparative research, including the University building, the Art library, a café, and a hospice, to collect viewer responses to the textile art piece using questionnaires and optional online interviews. The questionnaire was based on AEQ and divided to three sections namely Section A which collated information about the participants' demographic, through Section B, feedback on the prior viewer experience with art and comparison of artworks A and B were received. Finally, Section C was all about the emotional viewing response and willingness to participate in the optional online interviews. As no one took part in the optional online interview, the study's findings were entirely dependent on questionnaire responses. These findings will be presented and discussed in the following section, with a more in-depth analysis in the discussion chapter.

5.2 Research findings

A total of 43 people from all four locations took part in the survey. Due to Covid-19 restrictions, the researcher was not available during the active research in all four sites, hence participation was voluntary and random. The findings of the study through the questionnaire are listed in the below sections. Analysis of all the findings will be discussed in the next chapter.

5.2.1 Section A: Participant Demographic

Section A of the questionnaire covered the age, occupation, and location of the study were all covered. The age of the participants who took part in the study ranged from 20 to 90 years old. Unfortunately, three of the 43 participants did not provide their ages. The number of respondents

in the younger age group (20-40 years) was much lower than those in the middle (41-60 years) and older age groups (61 plus). The first group comprised of students, while the second and third was a mix of unemployed individuals, persons with professional backgrounds such as nurses, caretakers, library assistants, construction workers, and retired public. The number of participants and age groups are listed in descending order of participation at various venues in Table 5.1.

S.No	Venue	No. of participant	Participating age group
1	The Leeds Art library	20	41-90 years
2	Sue Ryder hospice	10	41-90 years
3	Barbara Hepworth University building	8	20-40 years
4	Left bank cafe	5	20-40 years

Table 5.1 Number of research participants of each venue in descending order along with the participating age group.

5.2.2 Section B: Prior experience of creative art and comparison of research artworks

In *Section B* of the questionnaire, the participants were asked about their involvement with art at any point in life, followed by a comparison of artwork A and B. These questions were important to understand if the participant had an art background of any kind which would influence the answers of Section C. As far as experience with art at any point of time be it either viewing or making art was concerned, 70% of those who responded said they had previously seen or created art (Figure 5.1).

The following are two participant responses to their first memories of art. An anonymous participant remarked, ‘At 5 years old, 1st day at school using bright orange and pink threads.’ while another commented, ‘Mother’s embroidery.’ Further moving on to questioning the visual aesthetics of the research artworks, 40 people responded that they were comfortable viewing the artwork, which was most of the participating number.

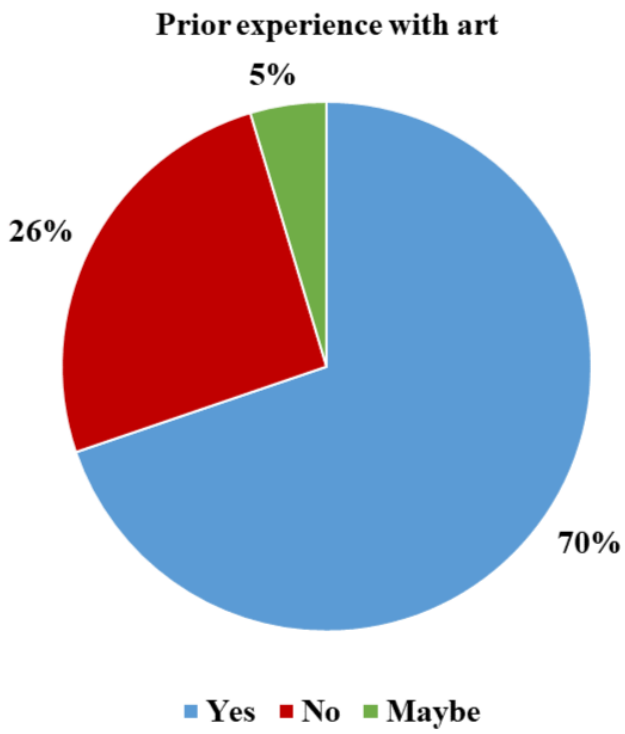


Figure 5.1 Pie chart showing participants' prior experience with art viewing or art making (Author's own)

Figure 5.2 shows the pie chart representing research artwork elements which attracted the viewer's attention against the number of participants. The research artwork elements were grouped from the survey answers. Nine participants found the colours most attractive at first sight, while the blue lines of the main pattern attracted eight viewers, followed by the central area for seven people. The choices kept gradually decreasing from five to two viewers as follows. Dots and detailing (five participants), overall pattern (four participants), coral orange lines (three participants) and outer area (two participants). These results were almost close to what was predicted by the researcher.

Questioned about finding any differences between the two artworks, the participants were all able to determine the two works of art apart and point out their distinctions. This question aided the researcher to help participants get more involved and retain attention with the artworks through closer physical examination. Most of them preferred handmade artwork 'A' for several reasons, including vivid colours, meticulous attention to detail, aesthetic appeal, and personal touch. While

four of them preferred artwork B for technical and personal reasons such as A's reflection due to the frame, B's lack of frame, and dislike of sewn art.

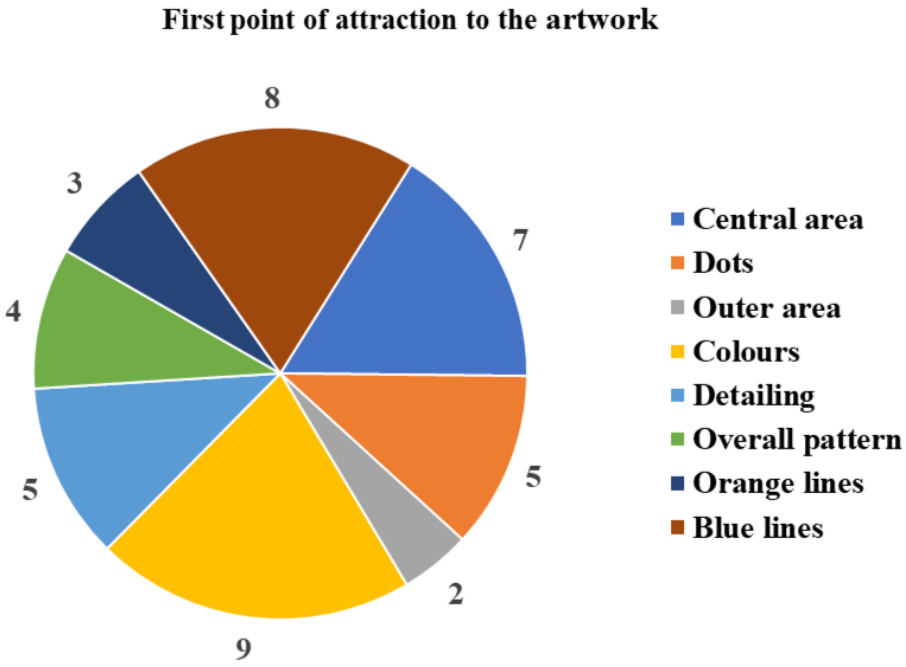


Figure 5.2 Pie chart showing survey data for question five, asking which point of the artwork the viewer found as a point of attraction (Author's own)

This close physical investigation of artworks for this question helped the participant to emotionally connect with the preferred artworks and assisted in answering the next question.

5.2.3 Section C: Emotional viewing response

The emotional viewing response of the observer was addressed in Section C. Each participant could choose as many relevant alternatives as they wanted from the 22 possibilities available. For this study, the top five options were evaluated. In the multiple-choice answers, the importance of colours garnered 22 votes, followed by 30 votes for the value of composition, and 21 votes for a good viewing experience. 17 people chose the artwork's intricacies, while 15 people chose to seek what the artist was attempting to say. For the full breakdown please see table 5.2. These results were also important to the researcher as it helped to understand if the research questions had been answered through the art making process and how far it has been successful in reaching the audience.

S No.	Question 8 answer options (in ascending order of response)	Number of responses
1.	The composition of a work of art is important to me.	30
2.	The colours of the artwork are important to me.	22
3.	The experience of viewing the artwork is rewarding to me.	21
4.	I focus on the subtle aspects of the artwork.	17
5.	I try to understand what the artist is trying to communicate.	15
6.	I try to place the artwork in its historical context.	14
7.	I see the artwork as an extension of the artist.	12
8.	I try to understand the artwork completely. I relate it to other works of art.	10
9.	I get lost in thought when I view the artwork. I am completely focussed on viewing the artwork. I lose track of time when I view the artwork.	9
10.	I compare the past culture of the art with the present day.	8
12.	I feel I am able to understand the work of art. My emotions change as I continue to view the artwork.	7
13.	I experience a physical reaction like goosebumps. I have a clear idea of what to look for when viewing the artwork. I usually feel that my thoughts on the work of art are correct.	4

Table 5.2 Table depicting survey data for question eight, asking the participant to choose one or more answer that is relevant to one's viewing experience

5.3 Summary

The research findings were crucial for the researcher to analyse to a large extent if the research questions could be answered just by examining the Kolam textile artworks in various settings. It was intriguing to see if the artworks were visually appealing solely because of the Kolam pattern, colours, and plaiting technique, or if anything else played a role. Based on the above research findings, the researcher would benefit greatly from analysing them in the following chapter to learn both the advantages and disadvantages, which of the two artworks was preferred and why and did they contribute towards wellbeing and how.

Chapter 6: Discussion

6.1 Introduction

The impact of a handmade therapeutic Kolam textile artwork versus a digital recreation of the same, as well as their contribution to wellness, is compared in this study. Its comparative component stems from an emphasis on the intervention's outcomes, whereas previous public art evaluations have tended to focus on technique, immediate impact after installation, or policy purposes rather than appreciation of the work itself. Even if the arts occasionally challenge their audiences, their positive impacts on their well-being are unquestionably an important part of their appreciation, especially if the artist meant it. Hence, the study's findings, were based on the emotional impact of viewing the artworks. The survey data is particularly important in revealing that the Kolam textile artwork is usually perceived as resonating with wellbeing or as a "work of emotion," rather than as an intervention.

This study also set out to answer a set of research questions from an objective perspective, albeit with a practical and applied focus. The use of a methodology, realistic evaluation, that did not start with existing notions but instead evaluated participants expected and actual outcomes of viewing the artwork was a crucial contribution. The outcomes and causes of the research questionnaire will be examined in the parts that follow. The purpose of the survey was to gather participants' thoughts and opinions about the research artworks from various perspectives such as age, occupation, past art participation, and so on. It was crucial to perform a public survey to evaluate whether the artwork contributed to their visual well-being, and to include both those who did not participate in the arts and those who consider themselves to have some type of experience with the arts. The adoption of a fixed questionnaire design allowed for an organised, methodical, and comparative analysis to look for patterns of similarity and difference, as well as to hypothesise certain causal effects at the level of variable association. The parts that follow go into the poll questions, results, and causes in greater depth.

6.2 Analysis of Section A

6.2.1 Participant demographic

The survey's 43 participants ranged in age from 20 to 90 years old. According to the data, the number of respondents in the younger age group (20-40) was significantly lower than those in the middle and older age group of 41-60 years and 61-90 years respectively. Because the participants' occupations ranged widely, it was useful for the researcher to know whether they had an artistic background, as this would have a significant impact on how they answered questions later in the survey.

6.2.2 Artwork location

The viewer's age group and number were strongly influenced by the artwork's location. The University and Left Bank Cafe majorly attracted a younger audience, but the Leeds Art Library and Sue Ryder Hospice received a relatively middle and older audience. The Leeds Art Library had the most visitors, followed by the Sue Ryder hospice, the University building, and finally the cafe, according to the statistics. There could be a variety of causes for this. In general, visitors to libraries and hospices are more relaxed and have more time to spend with books and patients, respectively, allowing them to explore their environment. Universities and cafes, on the other hand, are busier venues where the public may not have enough time to see and connect with the research artworks, even though two participation posters and the research artworks were prominently exhibited at all venues.

Furthermore, public participation was highly dependent on how each space's employees supported them with information about the ongoing research survey. Additionally, due to Covid-19 restrictions, attendance at the locations may have been lower than usual.

6.3 Analysis of Section B

6.3.1 Previous engagement with art

The researcher had included a set of questions for the survey to comprehend the audience's participation with the arts, which would be examined in this section.

According to the findings, 84% of participants thought art was important, while only 5% disagreed. This improved the research's effectiveness because there was a larger possibility of audience interaction with the research artwork if there was art enjoyment. As mentioned earlier, 70% have previously seen or created art at some point in their lives. The researcher divided the participants into three groups based on their responses to this question:

- Tactile artwork memory - These memories were about the participant making art or craft at a very young age and had hands on experience creating the art piece. Being able to touch and feel the final product also came under this category. 10 participants fell into this category.
- Visual artwork memory - These memories were about the participant either viewing a person making an artwork or viewing a finished art piece, for example in a gallery or a tv show. 17 participants were categorised here.
- None- Six participants who did not answer or were not sure about the answer came under this category.

According to the above analysis, it can be inferred that even as memory, visual artwork gives a positive experience which in turn contributes to wellbeing. According to Mastandrea et al. (2019), museum environments and artefacts provide an exceptional aesthetic experience that enables the retrieval of positive memories, and research shows that these remembrance actions can affect mood, self-worth, and an overall feeling of well-being in the aged. This research backs up the section's closing assertion.

6.3.2 Research artwork comparison.

The researcher's attempts to integrate the wellbeing aspects from Kolam, Visual art, and Textile art to create the therapeutic Kolam textile artwork were a success, as 95% of the subjects felt comfortable seeing the research artworks. Most participants liked colours, followed by indigo lines, and finally the centre area of the research artwork, (mentioned in descending order). This infers that the colours and the main indigo Kolam pattern contributed most to visual wellbeing as the researcher had intended to. Moreover, the usage of positive adjectives like ‘pleasing’, ‘incredible’, ‘interesting’, ‘attractive’, ‘amazing’, ‘refreshing’, ‘effort’, ‘love’, ‘nicer’ while

answering the attractive areas of the artwork, further supports that fact that the artwork contributed to the wellbeing of the observer.

The researcher received a variety of answers to which part of the artwork did the observer find as the first point of attraction. One of the participants mentions that:

> "The detailed braiding of artwork A is absolutely incredible, and the colour palette is really interesting with the cold contrasting outer and warm tones in the middle."

Another viewer mentions:

> "The central part catches my attention first but then I realise the pattern is spread out and extends to the 4 corners."

Most of the participants who preferred the handmade art piece described it as having; texture, a level of attention to detail, the aesthetic look, brighter colours, visual tactile effect, excitement and visual interactive nature, an eye-catching ability, originality as a textile art and been filled with emotion. This proves the level of participant engagement the researcher was able to achieve without her physical presence at the venue and in a short span of time.

Four votes were cast in favour of digital artwork for technical grounds such as ease of viewing owing to the absence of a frame, which eliminated reflection, and disdain for sewn art. These were considered and could be avoided without the glass. The overwhelming preference for handcrafted artwork, as well as the descriptions that support this choice like positive adjectives to describe viewing experience, attention to the artwork detailing, colour choices, demonstrate that Kolam textile artwork is therapeutic and has a beneficial impact on the viewer. This demonstrates that the artwork also met the criteria for enargeia and eudemonia. Due to the obvious colours, pattern, and detailing, the artwork has successfully grabbed and engaged attention. A few of the participants were also drawn to the pattern and must have attempted to follow the indigo lines from beginning to end, which would have benefited them with brain recognition and stretching. Clinical evidence, on the other hand, would bolster this conclusion. It's also worth noting that these elements were picked with great care for the final artwork, keeping in mind the aspects of wellness that they mirrored, and therefore led to viewer wellbeing.

As mentioned earlier, these set of questions in this section, allowed the observer to delve deeper, examine and engage more closer to the artworks, which would help them answer the following question as it was based on AEQ.

6.4 Analysis of Section C

A multiple choice AEQ question was included in Section C, and it was to be answered based on how relevant it was to one's viewing experience. The top six popular choices are analysed below.

According to the results of the data analysis, most of the participants chose the importance of the artwork composition. This clearly shows that the artwork's design was pleasing to the eye. The analysis of first and third choice of rewarding experience of viewing it, implying that the artwork was visually pleasing could be combined here. The reason could be that Kolams are an embodiment of rhythms, and because of the multiplicity of rhythms, they reflect a feeling of discipline and orderliness, allowing the participant to see them in a guided manner (as discussed in section 2.5.1.5, this paper) which is again proved here as the viewer’s eye must have travelled throughout the Kolam patterns to appreciate its rhythmic composition. As we have already discussed, to trace a moving line edge in an animation of a large Kolam also makes eye-muscle stretch, which was also experienced by the viewer here and hence has the artwork has also aided in the viewer’s physical wellbeing.

Reflecting on the second most popular choice was the artwork's colours, which proved that choice of chromotherapy colours and sequencing were apt for it and had a positive effect on the viewer.

The fourth option to be chosen was to focus on the subtle aspects of the artwork which would not have been possible without appreciating the detailing in the artwork for which plaiting, and closely packed braids played a major role. This also indicates visual appeal was being appreciated.

The fifth most picked option according to the data analysis, with 15 votes was for trying to understand what the artist was trying to communicate. These options being in the top five, which indicates the clear and perfect choices the researcher has made for the final artwork based on the literature review and experiments of this paper, demonstrating the want to reflect and observe the artwork.

Commenting on the sixth popular pick, the researcher mentions that trying to place the artwork in its historical context, the viewer had a reason to engage with the artwork and hence spend more time with it to investigate a comparative study with previous experience or knowledge gained in the past.

The participant seeing the artwork as an extension of the artist, follows next, which clearly indicates that the viewer is participating in the artist's thought process and hence engaging very deeply with the artwork. This provides a positive distraction for the viewer. Positive distractions, according to Ulrich (1999), are a small class of environmental-social phenomena that are defined by their ability to assist stress recovery expeditiously. Hence this clearly proves that the artwork is a positive distraction and hence contribute towards mental wellbeing.

In addition, six participants expressed an interest in participating in online interviews. However, owing to incorrect email addresses, failure to show up for the interview resulted in no online interviews for this study.

6.5 Summary

As evidenced by all the participants' descriptions of the research artwork, the researcher's approach to the aspects of wellbeing were aptly picked from Kolams, Visual art, and Textile art individually to construct the therapeutic Kolam textile artwork. The aesthetics of the research artwork, such as chromotherapy colours, choice of Kolam pattern, plaiting process, and backdrop texture, were considered to offer favourable results for the viewer, according to the data analysis. The research questions about the artwork's impact on the viewer like, if the artwork was therapeutic, did the artwork have had viewers engaged and contributed to their visual wellbeing, the impact of age, and prior experience with artwork for the research, have all been answered and reflected in the research survey. Furthermore, technical considerations such as the appropriate size of 2ft by 2ft, comparative display methods regardless of venue, cotton fabric selection, and Remazol dyeing methods for long lasting and vibrant colours all contributed to positive distraction and longer periods of engagement with the research Kolam textile artwork.

Based on the research analysis of the survey answers, the handmade artwork was preferred more than the digital replica. The Kolam pattern, colours, plaiting technique and other factors considered

at the planning stage of the artwork process worked out well as most survey answers included positive descriptions of the handmade artwork and the experiences associated with it successfully contributed towards visual aesthetics when compared to its digital replica.

According to Leder et al. (2004), information-processing stage model of aesthetic processing, aesthetic pleasure is predicated on a sufficient cognitive understanding of the artwork. The stronger one's comprehension, the less uncertainty there is, and the more likely one is to experience favourable aesthetic emotion. When aesthetic encounters are frequently favourable, positive effect is likely to increase (Leder et al., 2004) which has been observed and hence achieved from the research data analysis.

Chapter 7: Conclusion

7.1 How did the Kolam textile artwork aid in visual wellbeing?

It is very clear from the above analysis that the artwork 'A' which is the handmade artwork had an immense positive impact on the viewers due to comfortability in viewing the artwork and providing a rewarding and positive experience for the viewer, which is reflected through the participants' optimistic answers. Comparison between the two artworks proved that the handmade artwork was preferred due to its originality, aesthetic appeal, vibrant colours and detailing which in turn contributed to the overall aesthetic viewing experience, a positive distraction and prolonged viewer engagement.

As already mentioned, Leder et al. (2004) study on positive effect of aesthetic experiences are often favourable. Based on the processing fluency theory of beauty proposed by Reber et al. (2004), the more quickly a perceiver can absorb an object, the more pleasant the aesthetic response will be. As a result, when compared to the digital version of the Kolam textile artwork, the handcrafted artwork has aided in a greater positive influence and thus towards wellbeing. In this study the textile artwork, in its natural state, is highly valued and helps towards visual well-being, as the participants engaged with the artwork deeper due to its detailing and interesting visual tactile feel.

Only a positive distraction could have engaged the viewer for a prolonged engagement with the artwork. Ulrich (1999) produced a list of the benefits in terms of improved results that seem practically possible in an ingenious, notably in healthcare, based on a broad examination of the existing scientific data. Lowered tension for patients and family/visitors, enhanced sleep, pain control, improved patient experience, and staff benefits were among the non-exhaustive positive outcomes. Cost-cutting through improved medical results were also among the positive results like for example reduction of infection rates; less intake of costly strong analgesics; early shifting of some patients from intensive or acute care to less costly care units.

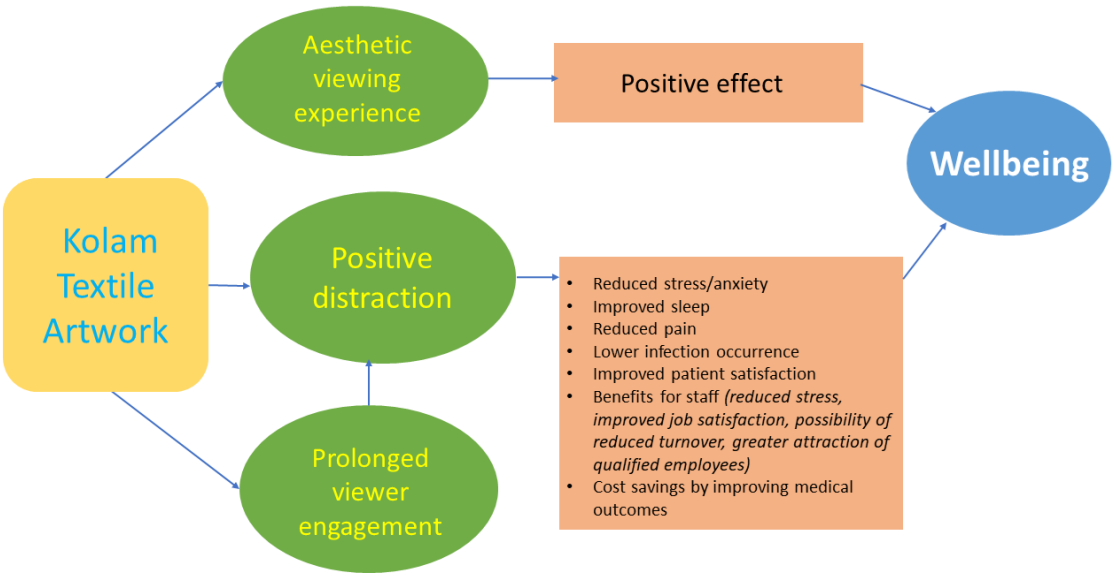


Figure 7.1 Diagram showing how handmade therapeutic Kolam textile artwork contributed to wellbeing based on this research's result analysis. (Author's own)

Although it may not have been possible to create a handmade Kolam textile artwork according to everybody's tastes, it was essential to capture and engage the viewer's attention for a reasonable period for positive engagement. According to the above research analysis this was achievable through this research.

To conclude, from the overall findings, this therapeutic Kolam Textile artwork would be successful in healthcare and public settings due to its positive distraction, intrigue, and impact it can have on its audience. The pattern, colours and colour sequencing have also greatly enhanced the aesthetics of the artwork and hence proven to be the right recipe for this artwork. This could be used to create similar artworks that are site specific with respect to size, colours and Kolam patterns. From a wellbeing perspective and high chances of artwork viewer engagement resulted in healthcare and library, this handmade therapeutic Kolam textile artwork would be suitable to be displayed at any spaces where the viewer has time to engage with the artwork or needs a positive distraction like healthcare setting's waiting room, chemotherapy units, dialysis units or at libraries and cafes.

Hence, this handmade therapeutic Kolam textile artwork contributed towards wellbeing in healthcare and public settings although there are scopes for further research as discussed in the next section.

7.2 Limitations

The study included some constraints, including a time limit on which the researcher had to complete the investigation. Although the study was written with a broad audience in mind, the research may have been more in-depth and effective if the researcher had reduced the number of participants and concentrated solely on one environment. This first goal became impracticable due to the inaccessibility of hospital settings for active research due to the Covid-19 pandemic. Due to limited accessibility and pandemic restrictions, the researcher could only do active study at locations near to their home. The glass frame for the artwork proved to be a disadvantage at the University and Library due to its reflection and hence affected viewer response. However, the glass was unavoidable so better exhibit spots could have been chosen.

7.3 Suggestions for further research

There are several promising research directions to pursue. This is a public artwork, and public art assessments have been reprimanded for failing to provide credible, factual evidence of the art's impact (or lack thereof). They've also been criticized for not studying public art using the proper methodologies. Most crucially, public art evaluation has been chastised for failing to identify who comprises the 'public' in public art, as well as for neglecting to regard these audiences as diverse and elusive ((Miles et al., 2004)).

This study attempted to address these issues, but it did so in a limited manner to generate a researchable topic for a Masters by Research project. It is a social enquiry into the wellbeing impact of art, utilising the Kolam Textile artwork as a research study, rather than an economic appraisal or any type of 'cost benefit' analysis. It looked at the perspectives and experiences of visitors who had and do not have any prior exposure to art. More in-depth research of the Kolam textile artwork as a visitor attraction or in a specific healthcare or public environment would be valuable and interesting.

One of the important conclusions of this study is that people's attributes, such as age, occupation, past art experience, and preference for handmade or digital artwork, all influence how they

perceive and interpret art. Based on this, only little data was gathered about how 43 people experience the Kolam textile artwork due to the nature of how this research was designed, and this is an additional interesting dimension for future work, such as how people specific to certain settings make attachments with the artwork for their wellbeing. A bigger comparison study of a collection of hand made and digital artwork would allow for greater investigation into why and how people identify with Kolam textile art, as well as how and why some works succeed more than others.

Adopting scientific methods, such as psychological or neurological experiments of viewing artwork, as well as technical methods, such as eye tracking techniques, will strengthen the evidence for the results of this research with solid clinical evidence. Moreover, further research could be taken up for different possibilities of the scale, design, colourways, and multiple Kolam designs. Digitally interactive design intervention is also a greater possibility to enhance engagement with the viewer. A deeper investigation is also possible to understand the strengths of digital over physical representations of Kolam art to promote wellbeing.

Finally, while public art assessments are critical for understanding the influence on communities and outcomes for future financing purposes, they must be undertaken with caution and proper resources as well as a good methodological foundation. Evaluations take time and should only be carried out for certain reasons. Evaluations conducted solely for administrative objectives, such as process evaluations or simple questionnaires, miss the potential to collect in-depth data that can assist in understanding how people benefit from therapeutic artwork. There is typically a lag effect when it comes to the influence of public art, and analyses should take this into account while planning, timing, and implementing the various parts of the project.

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Appendices

Appendix 1: Participant information sheet

Participant Information Sheet

Appendix 1

Research Project Title:

You are being invited to take part in a research project. Before you decide, it is important for you to understand why this research is being done and what it will involve. Please take time to read the following information and discuss it with others if you wish. Ask if there is anything that is not clear or if you would like more information. May I take this opportunity to thank you for taking time to read this.

What is the purpose of the project?

The research project is intended to provide the research focus for a module which forms part of my degree. It will attempt to research the impact of therapeutic textile art in the healthcare sector. The artworks are displayed in various spots of the institutions.

Why have I been chosen?

You have been chosen as you will be able to spend time with the art work during your treatment or therapy and are willing to participate in the process.

Do I have to take part?

Participation on this study is entirely voluntary, so please do not feel obliged to take part. Refusal will involve no penalty whatsoever and you may withdraw from the study at any stage without giving an explanation to the researcher.

What do I have to do?

You will be asked to view an artwork.

The whole process will take around 10-15 minutes only.

- Firstly, you will be answering a questionnaire.
- Next, you will have to prepare yourself with a simple breathing exercise which will take around 2-3 minutes, for which instructions will be given.
- Following this, you will have to view the artwork in front of you as long as you wish. Kindly gesture once you feel you are happy with the viewing.
- Now you will be answering a questionnaire again.

- You can also take part in an ***optional*** interview to discuss your experiences and views on the therapeutic art works. Your interview will be video or audio recorded (completely participant's preference) on a Dictaphone and photos maybe taken during the process with your consent only.

Are there any disadvantages to taking part?

There should be no foreseeable disadvantages to your participation. If you are unhappy or have further questions at any stage in the process, please address your concerns initially to the researcher if this is appropriate. Alternatively, please contact Preethi Ravichandran at the School, University of Huddersfield.

Will all my details be kept confidential?

All information which is collected will be strictly confidential and anonymised before the data is presented in any work, in compliance with the Data Protection Act and ethical research guidelines and principles.

The data recorded will comply with the University of Huddersfield data storage policy and the data protection act. They will be stored on the 'K' drive or BOX, and not USB's or cloud storage. Any photographs containing faces, names, personal details or signatures will be blurred or cropped to comply with participant confidentiality. Nobody other than the student (visiting researcher), or the supervisor will have access to the data. All signatures and personal information will be blurred out and protected when included in any reports. Participants will be able to request copies of all data if they so require.

Anonymity-With your consent your role and the company or trade name may appear in this Study or subsequent academic publications based on this research.

What will happen to the results of the research study?

The results of this research will be written up in my study. If you would like a copy, please contact the researcher.

What happens to the data collected?

The data will be used to inform the study findings and support the exploration of healing effects of textile art in the healthcare sector.

Will I be paid for participating in the research?

No payment will be provided for this participation

Where will the research be conducted?

Research will conducted at the healthcare unit where you have been admitted or undergoing treatment.

Who has reviewed and approved the study, and who can be contacted for further information?

Name & Contact Details of Researcher:

Preethi Ravichandran,

Student of Research in Art & Design,

University of Huddersfield.

Mail id: preethi.ravichandran@hud.ac.uk

Appendix 2: Participant consent form

Participant Consent Form

Appendix 2

Title of Research Study: Kolam Textile Artwork: Examining the Impact of Handmade Kolam Textile Artwork on the Viewer's Wellbeing.

Name of Researcher: Preethi Ravichandran

Participant Identifier Number:

☐ I confirm that I have read and understood the participant Information sheet related to this research and have had the opportunity to ask questions.

☐ I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

☐ I understand that all my responses will be anonymised.

☐ I give permission for members of the research team to have access to my anonymised responses.

☐ I agree to take part in the above study

Name of Participant:
_____

Signature of Participant: _____ Date:
_____

Name of Researcher:
_____

Signature of Researcher: _____ Date:
_____

Appendix 3: Researcher consent form

Researcher Consent Form

Appendix 3

This form is to be used when consent is sought from those responsible for an organisation or institution for research to be carried out with participants within that organisation or institution. This may include schools, colleges or youth work facilities.

Title of Research Study: Kolam Textile Artwork: Examining the Impact of Handmade Kolam Textile Artwork on the Viewer's Wellbeing.

Name of Researcher: Preethi Ravichandran

Name of School/College/organisation: University of Huddersfield

Describe i) the purpose of the research study

ii) the data collection methods to be used

iii) which pupils/groups/classes will be selected for this study.

i) Purpose-
The aim of this study is to investigate the impact of therapeutic textile art in healthcare environment for the patients and staff.
My research involves displaying positively energised, handmade textile artworks over a period of time, at various spots, to a wide range of viewers at the healthcare.
Recording and studying their changes in mental and emotional health, before and after installing the art works will be of great value and an elevating experience for me and the observer.

ii) Data collection methods to be used-

Questionnaires -
Emotional indicators related to happiness, affection, stress, anxiety, change in moods and pain tolerance will be recorded before and after the visual process.
Questionnaires will be systematically maintained.

Interviews-
Participants will be approached after the visual process and asked if they are willing to be interviewed about the overall experience. Interviews are optional.

iii) Which pupils/groups/classes will be selected for this study-

The experiment is targeted at adults and the elderly who are admitted or taking treatment in a healthcare. They must be willing to and spend the allotted period of time to achieve solid research results.

☐ I confirm that I give permission for this research to be carried out and that permission from all participants will be gained in line within my organisation's policy.

Name and position of authorised signatory:

_____

Signature: _____ **Date:**

_____

Name of Researcher: __ PREETHI RAVICHANDRAN

_____

Signature of Researcher: _ PREETHI RAVICHANDRAN _ **Date:**

_____

☐ I confirm that I give permission for this research to be carried out and that permission from all participants will be gained in line within my organisation's policy.

Name and position of authorised signatory:

_____

Signature: _____ **Date:**

Name of Researcher: _PREETHI RAVICHANDRAN____

Signature of Researcher: __PREETHI RAVICAHNDRAN_____ **Date:**

Appendix 4: Questionnaire

University of HUDDERSFIELD
Inspiring global professionals

Participant consent form

Title of study-

THERAPEUTIC CLOTH: Examining the impact of Textile art in various settings.

Researchers-Preethi Ravichandran

Supervisors- Dr.Helen Ryall & Amy Chen

Name of the organisation- The University of Huddersfield

Thank you for your interest in this project. Before agreeing to participate, please read the information sheet. If you have any questions, please ask the researcher.

Please tick the box aligned to each sentence and print and sign below (electronic confirmation is acceptable)

I confirm that I am aware about the purpose of the research.	☐
I understand that my participation is voluntary and that I can withdraw from the study at any point of time up until the interviews are concluded and I have seen the transcript. I do not have to give any reasons why I no longer wish to take part.	☐
I understand that my words may be quoted in publications, reports, web pages and other research outputs. I understand that I will not be personally identifiable, and any research will be anonymised with different names.	☐
I understand that any data shared with other agents will be anonymised and will only be used for analysis, monitoring and evaluation of this specific project. I understand that such information will be treated as confidential, except where legal obligations require information to be shared with relevant personnel and handles in accordance with the provisions of the General Data Protection Regulations (GDPR)and UK Data Protection Act 2018.	☐
I give permission for the researcher to record the interview onto a digital voice recorder or audio call facility as well as detailed notes made (if declined, only detailed notes will be taken).	☐

I understand that my personal information will be processed only for the purposes of this research.	☐
I agree to take part in the research by signing below.	☐

Name of participant: **Signature:** **Date:**	**Researcher**: Preethi Ravichandran **Signature: Preethi R** **Date:**

Questionnaire

Your answers are anonymous, hence please answer all the questions to the best of your ability-

SECTION A-

Full Name-…… **Date of birth**-……

Age-…… **Occupation**- ……

Location of research- ☐ BH Building ☐ Sue Ryder Hospice ☐ Leeds Art Library ☐ Left Bank,Leeds

☐ Other (please specify) ……

SECTION B-

1. Do you think art is important?

☐ Yes, very much ☐ Not sure ☐Not at all

2. Do you have experience viewing or making art before?

☐ Yes, very much ☐ Not sure ☐Not at all

3.What is the first memory that comes to your mind about the experience?

4. Did you feel comfortable viewing the artworks? ☐Yes ☐No

5. Which part of the artwork do you find as a point of attraction?

6. Do you find any difference/differences between artworks A & B? If yes, please explain-

7. Do you prefer artwork A or B and why?

SECTION C- Tick 1 or more answers that is relevant to your viewing experience-

8. When I view the artworks..

☐ The composition of a work of art is important to me.

☐ I feel moved.

☐ I try to understand the work completely.

☐ I see the work of art as an extension of the artist.

☐ The colors of the work of art are important to me.

Appendix 5: Research survey poster

Appendix 6: QR code poster

The research artworks are inspired by KOLAMs. Kōlam is a daily women's ritualistic art form created by Tamil Hindu women throughout Tamil Nadu in southern India.

The kōlam patterns are drawn every morning in the threshold of every house, deftly by women with the tips of their fingers using pinches of flour held between the thumb and the first finger and letting the powder fall in a continuous line by moving the hand in desired directions. The patterns of lines and curves are based on a grid of pullis (dots) that are encircled, looped, or joined using straight or curved lines. The process involves concentration, memory, and a series of disciplined hand and body movements.

SCAN CODE TO ANSWER THE QUESTIONNAIRE

Your answers will be anonymous

University of
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Participant consent form

Title of study-

THERAPEUTIC CLOTH: Examining the impact of Textile art in various settings.

Researchers-Preethi Ravichandran

Supervisors- Dr.Helen Ryall & Amy Chen

Name of the organisation- The University of Huddersfield

Thank you for your interest in this project. Before agreeing to participate, please read the information sheet. If you have any questions, please ask the researcher.

Please tick the box aligned to each sentence and print and sign below (electronic confirmation is acceptable)

I confirm that I am aware about the purpose of the research.	☑
I understand that my participation is voluntary and that I can withdraw from the study at any point of time up until the interviews are concluded and I have seen the transcript. I do not have to give any reasons why I no longer wish to take part.	☑
I understand that my words may be quoted in publications, reports, web pages and other research outputs. I understand that I will not be personally identifiable, and any research will be anonymised with different names.	☑
I understand that any data shared with other agents will be anonymised and will only be used for analysis, monitoring and evaluation of this specific project. I understand that such information will be treated as confidential, except where legal obligations require information to be shared with relevant personnel and handles in accordance with the provisions of the General Data Protection Regulations (GDPR)and UK Data Protection Act 2018.	☑
I give permission for the researcher to record the interview onto a digital voice recorder or audio call facility as well as detailed notes made (if declined, only detailed notes will be taken).	☑
I understand that my personal information will be processed only for the purposes of this research.	☑
I agree to take part in the research by signing below.	☑

Name of participant: [redacted]	**Researcher**: Preethi Ravichandran
Signature [redacted]	**Signature: Preethi R**
Date: 18/11/21	**Date:**

Questionnaire

Your answers are anonymous, hence please answer all the questions t the best of your ability-

SECTION A-

Full Name-[redacted] **Date of birth-**[redacted]

Age-38 **Occupation-** [redacted]

Location of research- ☐ BH Building ☑ Sue Ryder Hospice ☐ Leeds Art Libr ☐ Left Bank,Leeds

☐ Other (please specify) .....

SECTION B-

1. Do you think art is important?

☑ Yes, very much ☐ Not sure ☐ Not at all

2. Do you have experience viewing or making art before?

☑ Yes, very much ☐ Not sure ☐ Not at all

3.What is the first memory that comes to your mind about the experience?

Unsure

4. Did you feel comfortable viewing the artworks? ☑Yes ☐No

5. Which part of the artwork do you find as a point of attraction?

A - Texture

6. Do you find any difference/differences between artworks A & B? If yes, please explain-

A is more pleasing. Colours in B are too bright

7. Do you prefer artwork A or B and why?

A See above

SECTION C- Tick 1 or more answers that is relevant to your viewing experience-

8. When I view the artworks..

☐ The composition of a work of art is important to me.

☐ I feel moved.

☐ I try to understand the work completely.

☐ I see the work of art as an extension of the artist.

☐ The colors of the work of art are important to me.

☐ I gain new insights the work of art itself.

☐ I see the work of art as an extension of its time period.

☑ I experience a wide range of emotions.

☑ I relate it to other works of art.

☑ I focus on the subtle aspects of the work of art.

☑ My emotions change as I continue to view the work of art.

☐ I try to place the work of art in its historical context

☐ I try to understand what the artist is trying to communicate.

☑ I experience a physical reaction (i.e., goosebumps, chills, tingling of th spine, quickened heart rate).

☐ I compare the past culture of the art with present-day culture.

☐ I feel I am able to understand the work of art.

☑ I get lost in thought when I view the work of art.

☐ I have a clear idea of what to look for when viewing the work of art.

☐ I usually feel that my thoughts on the work of art are correct.

☑ I am completely focused on viewing the work of art.

☑ I lose track of time when I view the work of art.

☑ The experience of viewing the work of art is rewarding to me.

9. Are you interested to take part in an ***online interview*** to share more in c about your viewing experience?

☐Yes ☑No

*If yes, please provide your mail id for further contact-

.....

Thank you for participating in the research survey.

Appendix 8: Ethical Review form

Ethical Review – Form B

Limited or Significant Risk

APPLICABLE FOR ALL RESEARCH REQUIRING SPECIFIC ETHICAL APPROVAL

Before completing this form please refer to the School Research Ethics web pages which can be found using this link.

Ethical Approval is needed for all research involving any of the following:

- direct contact with human participants (e.g. interviews or questionnaires)
- direct contact with animal participants
- access to identifiable personal data for living individuals not already in the public domain
- increased danger of physical or psychological harm for researcher(s) or subject(s)
- research into potentially sensitive areas
- use of students as research assistants
- joint responsibility for the project with researchers external to the University.

Taught students and PGR should consult the appropriate ethical guidelines. The respective academic supervisor should assist with advising you on appropriate professional judgement in this review prior to final submission to the Ethics Committee.

You cannot proceed with your active research until ethical sign off is notified to you by the ADA Ethics Committee.

Please tick one of the following options and then complete your individual details and ethical information.

Module Approval		Academic Staff Research Bid/Project	
Undergraduate		Postgraduate Researcher	YES

Postgraduate Taught		*Is this a resubmission?*	NO

SUBMISSION GUIDANCE

Undergraduate, taught postgraduate and postgraduate research; please complete in conjunction with your module leader, supervisor for review and for them to sign off this form prior to final submission for ethical approval. Email all relevant documentation/forms to: sadapgradmin@hud.ac.uk

PGR ethical review submission is due 6 weeks prior to your PM1 report submission date. You can submit your ethical review request at any time prior to this deadline.

Academic Research: once fully completed please email with your research bid/documentation to sadapgradmin@hud.ac.uk

Hand written forms will not be considered by the ethics review panel. Please fully complete and submit electronically

Before completing please refer to the School Research Ethics web pages which can be found using this link.

SECTION A: APPLICANT DETAIL *(complete **sections** as appropriate)*

Surname *(all)*	**RAVICHANDRAN**	**First name** *(all)*	**PREETHI**
Student number	**U2082146**		
Taught study *UGrad, PGT*		**Module Number** **Module Leader**	
Supervisor	Dr. Helen Ryall		
Project start date *(all)*	18-01-2021		

Project Title	Kolam Textile Artwork: Examining the Impact of Handmade Kolam Textile Artwork on the Viewer's Wellbeing.
Risk level *(all)*	Limited Significant

Circle relevant Unit of Assessment (UoA) for your research area.	**UoA13** Architecture and Built Environment	**UoA32** ***Art and Design***

SECTION B: PROJECT OUTLINE

Please provide sufficient detail for your supervisor to assess strategies used to address ethical issues in the research proposal.

	COMMENTS:
Aim / objectives of the study These need to be clearly stated and in accord with the title of the study. (Sensitive subject areas which might involve distress to the participants will be referred to the Course Approval Panel).	The aim of this study is to investigate the impact of therapeutic textile art in healthcare environment for the patients and staff. The research investigation involves displaying a textile art installation over a period of time to a wide range of viewers in a healthcare setting, recording their responses via qualitative survey methods such as online questionnaires and interviews. Recording observations and experiences through questionnaires will help measure their progress in mental and physical health will be of great value and an elevating experience for me and the observer.
Brief overview of research methodology The methodology only needs to be explained in sufficient detail to show the approach used	This study is an evidence-based research. It will investigate the impact of my art works which involves healing patterns, shapes and colours on the mental

(e.g. survey) and explain the research methods to be used during the study.	and emotional aspects of the viewer. The creation of the art works will be based on a kolam pattens. The research will by qualitative analysis which involves questionnaires after viewing. <u>Art works-</u> The research involves one art work (which can be duplicated if required), entirely handmade by me encompassing an amalgamation of kolam patterns, and sustainable colours. <u>Artwork methods</u>- Tear and paste method, plaiting, simple weaving method. <u>The Display-</u> The artwork will be displayed in the specific rooms or areas of the healthcare centre. <u>Questionnaires</u> - Emotional indicators related to emotion and moods will be recorded after the visual process through questionnaires. Questionnaires will be systematically maintained.
Does your study require any third party permissions for study? If so, please give details, e.g., company permission	Yes, my research involves permission from a healthcare set up, preferably- a. Hospice or b. Dialysis, Geriatric and Chemotherapy departments in the hospital or c. Care homes.

	<u>Interviews</u> Third party permission will be required to interview company employees. Consent will in this circumstance be gained from the company as well as participant.
Participants Please outline who will participate in your research. If your research involves vulnerable groups (e.g. children, adults with learning disabilities), it must be referred to the Course Assessment Panel.	Possible list of participants who will be involved are – • Hospice patients AND/OR • Care homes AND/OR • Patients undergoing chemotherapy AND/OR • Patients in Geriatric ward AND/OR • Patients undergoing dialysis All the patients involved in the research will be adults (above 18 years of age) and elderly. Vulnerable group adults WILL NOT be involved.
Access to participants Please give details about how participants will be identified and contacted.	The healthcare/ hospice/hospital will be the prime source of contact. A poster will be displayed calling for volunteers within the setup to participate in the research, which will clearly mention the area of artwork displayed in the premises. Staff assistance will be vital at all stages. Volunteers (both staff and patients) will participate in the research on the actual dates when the artwork is displayed. Questionnaires will be sent through mail and reminders through whatssap to fill in the forms and return by the deadline.

How will your data be recorded and stored? Please confirm that as a minimum this will comply with the university data storage policy and the Data Protection Act. Please indicate also any further specific details.	I confirm that all sensitive/confidential data will be stored on the secure university K drive. Yes No (provide further details if No) Data collected on recording devices will be deleted from such devices once it has been safely transferred to the K drive or BOX . This will take place within a week of the initial recording taking place. Data saved on the K drive or BOX will be kept for up to 6 years in order for it to be referred to during the study's duration and for research outputs that may follow. After this period, it will be deleted.
Informed consent. Please outline how you will obtain informed consent. *(See Appendices consent forms)*	<u>Questionnaires-</u> Participant's permission will be sought before taking part. Participants will have the process explained and will need to provide consent before agreeing to take part. <u>Interviews</u> Interview is optional. Participant's permission will be sought before taking part in the questionnaire. Participants will have the process explained and will need to provide consent before agreeing to take part. Third party consent will be sought from companies before interviews can be conducted with specified employees
Confidentiality Please outline the level of confidentiality you will offer respondents and how this will be respected. You should also outline about who will have access to the data and how it will be stored. (This should be included on information sheet.) ***To note**: Any photographs containing faces, names, personal details or signatures will be blurred or cropped to comply with participant confidentiality. Nobody other than the Ph.D. student (visiting researcher), or the*	The data recorded will comply with the University of Huddersfield data storage policy and the data protection act. They will be stored on the 'K' drive or BOX, and not USB's or cloud storage. Any photographs containing faces, names, personal details or signatures will be blurred or cropped to comply with participant confidentiality. Nobody other than the Ph.D. student (visiting researcher), or the Ph.D. supervisor will have access to the data. All signatures and personal information will be blurred out and protected when included in any reports.

Ph.D. supervisor will have access to the data. All signatures and personal information will be blurred out and protected when included in any reports.	Questionnaires- Interviews Participants will provide the researcher with verbal feedback during an optional interview. The interview will be online due to the current pandemic situation. The researcher will be the only other person present acting as the interviewer. Any photographs containing faces, will be blurred or cropped to comply with participant confidentiality. Dictaphone recordings, written notes and photos will be transferred to the university K drive or BOX for storage. Participants will be able to request copies of all data if they so require. Participation proofs- Photo of the participants viewing artworks and written case study records will be used as part of the data collection process. Any photographs containing faces, will be blurred or cropped to comply with participant confidentiality. Photos and written data will be transferred to the university K drive or BOX for storage. Participants will be able to request copies of all data if they so require.
Anonymity Do you intend to offer anonymity? If so, please indicate how this will be achieved. ***To note:*** *for most projects anonymity should be offered as standard unless there are compelling grounds not to.*	Interviews When any data is written in Study or other academic publications participant names will be kept anonymous, however, roles will be identified. Companies names will also only be used with participants/ company consent. Interviews notes will never be published in full and quotes won't be attributed. Some of the interview notes may be shared with REF2021 if requested and protected by REF2021 privacy policies.

Harm Please outline your assessment of the extent to which your research might induce psychological stress, anxiety, cause harm or negative consequences for the **participants** or the **researcher** (beyond the risks encountered in normal life). If more than minimal risk, you should outline what support there will be for participants. If you believe that that there is minimal likely harm, please articulate why you believe this to be so. ***To note:*** *If there is potential for harm to the researcher (physical or psychological) please attach a risk assessment.*	All the research will take place in safe, neutral and relaxed environments No risks have been identified beyond those encountered in normal life. The research should not cause stress or anxiety – it is seeking to establish problems encountered by communities, but participants will be told that what they say won't be shared with others in that community.
Does the project include any security sensitive information? Please explain how processing of all security sensitive information will be in full compliance with the "Oversight of security-sensitive research material in UK universities: guidance (updated November 2019)" (Universities UK, recommended by the Association of Chief Police Officers)	No Yes If yes, please provide further information.

Retrospective applications. If your application for Ethics approval is retrospective, please confirm the **due** submission date, and explain why this has arisen.

SECTION C: SUMMARY OF ETHICAL ISSUES

Please ensure this section is completed in conjunction with your supervisor prior to submission, if appropriate. Active research cannot commence until ethical approval has been confirmed to you.

Provide a summary of the ethical issues and any action that will be taken to address the issue(s).

The ethical issues that will be arise are minimal.

Questionnaires

Emotional indicators related to happiness, affection, stress, anxiety, change in moods and pain tolerance will also be recorded before and after the visual process in written format.

Questionnaires will be systematically maintained.

Interviews

Participants taking part in interviews will be asked to provide their views and experiences after viewing the artworks.

Participants will be encouraged to answer the same questions from the questionnaire elaborately , purely from their own experience without any kind of persuasion from the researcher.

Participants will not be identified by name in the study or other academic publications, however, participant roles will be identified. Companies names will also only be used with participants/ company consent.

All participants will be provided with consent forms in order to take part in the questionnaires and interviews.

Utmost care will be taken to respect the autonomy, decision-making and dignity of participants.

SECTION D – ADDITIONAL DOCUMENTS CHECKLIST

Please supply your supervisor with copies of all relevant supporting documentation electronically. If this is not available electronically, please provide explanation and supply a hard copy.

I have included the following documents:

Information sheet	Yes	Not applicable
Consent form	Yes	Not applicable
Questionnaire	Yes	Not applicable
Interview questions	Yes	Not applicable

Appendix 9: Research support plan

University of HUDDERSFIELD
Inspiring global professionals

Research Support Plan

Section 1: Student Details

Student Name	**PREETHI RAVICHANDRAN**
Student number	**U2082146**
Research Degree	**MRes Art and Design**
School	**Art, Design and Architecture**
Main Supervisor	**Dr. Helen Ryall**
Date of enrolment	**18/01/2021**
Mode of Attendance	☑ Full time ☐ Part time
Planned completion date	19/06/2021

Section 2: Your Research Proposal

Is this proposal for practice based research? **(This can include an artefact, design, performance, composition etc.)**	☑ Yes ☐ No
Title of proposed research project	

Please attach a research proposal
Your research proposal should normally include:

- Title of the project;
- Aims of the project;
- Background context of the research topic;
- Review of existing research literature, demonstrating the original contribution this project will make;
- Research questions or objectives;
- Methodology and project design;
- Project plan with timeline, including progression milestones (e.g. Gantt chart);
- List of references.

Section 3: Research Ethics and Integrity

To be completed by all PGRs who commenced their studies from September 2020 onwards

I have completed Research Integrity Training ☑ Yes ☐ No

The name of the training I have completed is _____Epigeum_____

I completed this training on: 27/02/2021

Please note:

- the normal expectation for PhD students (full-time and part-time) is to complete an ethics form and gain approval at the relevant School Committee by Progression Point 1. Please refer to your School guidelines on completing ethics forms for approval;
- for MA/MSc by Research Degree students, the expectation is that you should complete an ethics form and gain approval at the relevant School Committee by the end of month 3 (for full-time students) and by the end of month 6 (for part-time students). Please refer to your School guidelines on completing ethics forms for approval.

1. What ethical principles/codes of practice will guide your research?

- Respect for participants –Participant's views are faithfully recorded and given due consideration in the assessment process.
- Informed consent – Participation will be the voluntary choice of the participants and is based on sufficient information and an adequate understanding of the research and the consequences of their participation. The researcher will disclose all relevant information and any possible risks of participation, especially any issues around what will happen to the data obtained in the information sheet.
- Specific permission required for audio- or video-recording – The researcher will be either audio recording or videorecording or photographing any participant only with their specific approval.
- Voluntary participation and no coercion –Participation is voluntary and not subject to any coercion or threat of harm for non-participation
- Right to withdraw –Participants will know that they can withdraw at any time and have any of their data already recorded removed from the analysis where this is possible.
- No harm to participants -Participants will not be exposed to pain or danger in the course of the research (such as in a psychological experiment or medical trial), but also that there will be no adverse consequences to a person as a result of their participation. The participant will be fully appraised of all possible risks from participation.
- Avoidance of undue intrusion –There will be discussion only of those matters that are relevant to the issues under research and that enquiries would be confined to those issues. It implies a respect for the personal lives of

participants and that researcher would be cognizant of what is personal and private.

- No use of deception –Respect for participants and professional integrity will be upheld.
- Presumption and preservation of anonymity –People participating in research will be anonymous and that their anonymity will be protected, unless they give permission to be named. Thus, there is a requirement for the expressed permission from participants for any use of the real names of people when the person (from staff) holds an important position in the healthcare unit.
- Right to check and modify a transcript –If people are named or identifiable, those participants will have the right to check how they are quoted and to make changes to a transcript and any draft publication that may be prepared to ensure they agree with the way they are recorded.
- Confidentiality of personal matters –Confidentiality (i.e. non-disclosure of information) would be accorded to all private or personal matters or views, or when interviews are conducted. If any critical information is entrusted to a researcher in confidence, such confidentiality will be protected.
- Data protection –Utmost care would be taken to ensure that the data are stored securely and safe from unauthorized access. The data recorded will comply with the University of Huddersfield data storage policy and the data protection act. They will be stored on the 'K' drive or BOX, and not USB's or cloud storage. Any photographs containing faces, names, personal details or signatures will be blurred or cropped to comply with participant confidentiality. Nobody other than the Mres student (visiting researcher), or the Mres supervisor will have access to the data. All signatures and personal information will be blurred out and protected when included in any reports.
- Grievance procedure –Participants will have access to a grievance procedure and recourse to corrective action. The grievance procedure will be procedurally fair, and properly disclosed to participants.
- Appropriateness of research methodology –The research procedure will have reliability and validity.
- Full reporting of methods – Research methods and analytical procedures will be fully disclosed to enable replication of the research by another researcher; enable peer review of the adequacy and ethicality of the methodology; and will encourage critical self-reflection on the limitations of the methodology and any implications for the results and conclusions.

2. Are any particular ethical issues likely to arise in this research, and how will you address them?

The ethical issues that will be arise are minimal.

Questionnaires
Emotional indicators related to happiness, affection, stress, anxiety, change in moods and pain tolerance will be recorded after the visual process in written format. Questionnaires will be systematically maintained.

Interviews (online) *(optional)*
Participants taking part in interviews will be asked to provide their views and experiences after viewing the artworks. During the interview, the process of visual experience maybe be recorded. The final submission will include information that is only relevant to the research topic.
Participants will be encouraged to answer the same questions from the questionnaire elaborately , purely from their own experience without any kind of persuasion from the researcher.
Participants will not be identified by name in the study or other academic publications, however, participant roles will be identified. Companies names will also only be used with participants/ company consent.

All participants will be provided with consent forms in order to take part in the questionnaires and interviews. The interview is ***optional.***

Utmost care will be taken to respect the autonomy, decision-making and dignity of participants.

Section 4: Health and Safety

Have any health and safety issues arisen, or might arise, and how will you address them?
All the research will take place in safe, neutral and relaxed environments No risks have been identified beyond those encountered in normal life. The research should not cause stress or anxiety – it is seeking to establish problems encountered by communities, but participants will be told that what they say won't be shared with others in that community.

Section 5: Skills Audit

Please attach your completed Skills Audit.

Have you and/or your Main Supervisor identified any areas of training and development that will be required to support the progression of your research?
Yes

Section 6: Required Resources

Please describe any resources/facilities that will be required for you to complete your research (including whether these are readily available)
Yes, my research involves permission from healthcare set ups, preferably-

a. Hospice or
b. Dialysis, Geriatric and Chemotherapy departments in the hospital or
c. Care homes.

Section 7: Confirmation

- I wish to apply to my supervisory team for approval of my research programme on the basis of the information given in this application;
- I confirm that the particulars given are correct;
- I understand that, except with specific permission, I may not, during the period of my enrolment, be a candidate for another award;
- I understand that, except with the specific permission, I must prepare and defend my thesis in English;
- I agree to address any Skills Audit requirements that are necessary for consideration for progression.

PGR signature:	PREETHI RAVICHANDRAN	**Date:**	Select

Section 8: Supervisor Approval

- I confirm approval of the research support plan
- I confirm the project is appropriate and viable

Main supervisor signature:		**Date:**	Select

For School Use Only

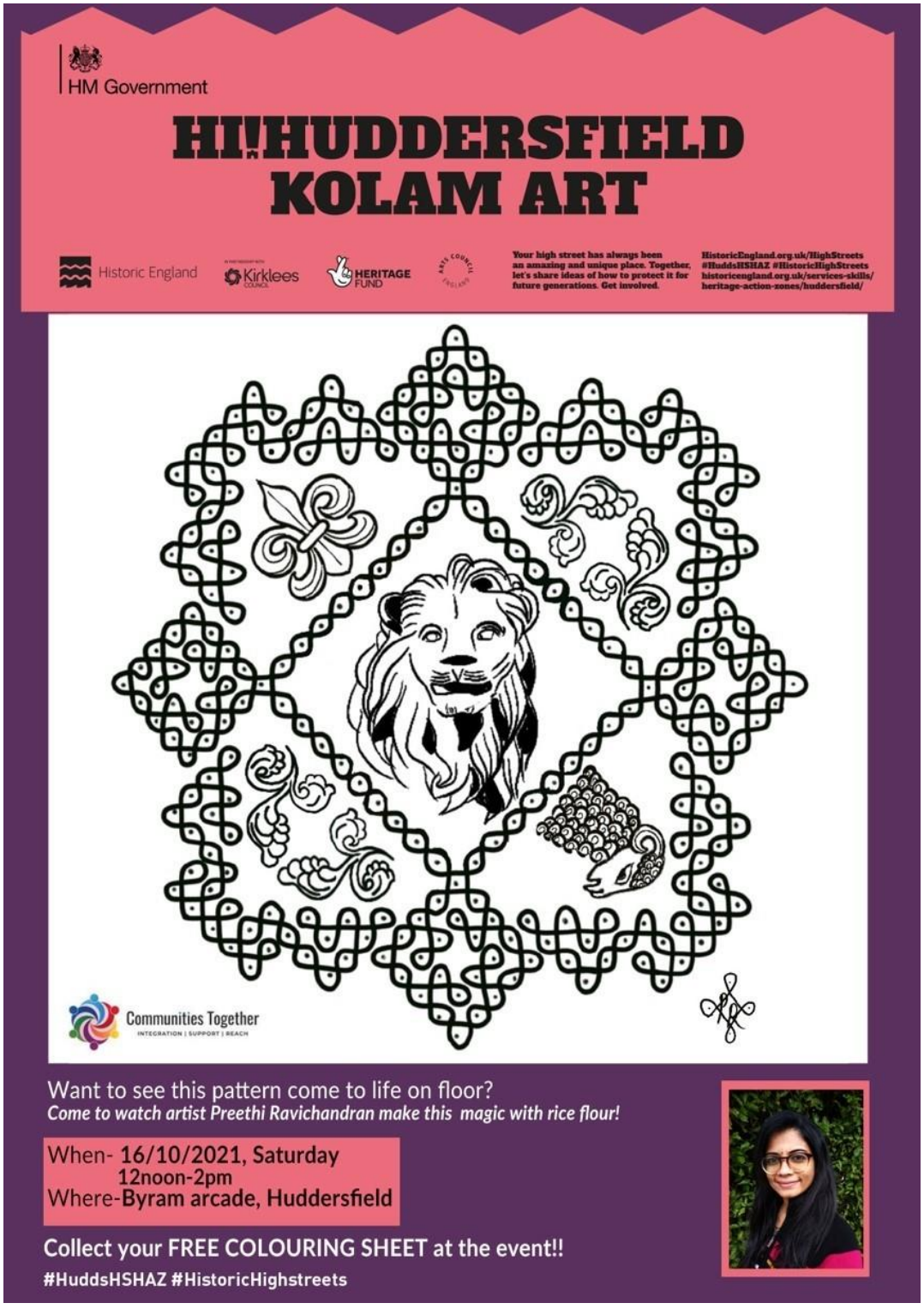
☐	PGR informed of outcome, cc Main Supervisor and include a copy of the full report
☐	Update ASIS RDS 'Stage' with the outcome and RDS 'Stage Comp' with the date
☐	Update School local records
☐	Upload a copy of the report and the outcome sent to the PGR to Wisdom

Appendix 10: Participant making Kolam art with rice flour on canvas at the Kolam making workshop, Sangam festival.

Appendix 10.1: Children participating in the workshop.

Appendix 10.2: Final artwork made by participants.

Appendix 11: Huddersfield Heritage Action Zone event poster cum participant colouring sheet.



Appendix 11.1: Final Kolam made by the researcher combining Kolam pattern and important heritage symbols of the city.

Appendix 12: Poster for Kolam talk and Textile Kolam making workshop, Leeds Art Library.

Appendix 12.1: Researcher making rice paste Kolam at the venue.

Appendix 12.2: Talk about why Kolams are patterns for wellbeing.

Appendix 12.1: Textile Kolam art made by one of the workshop participants combining painting, braiding and simple sewing methods.