SUMMARY AND CONCLUSION

Chapter 5
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5.1 Introduction

India has a long history of producing traditional textiles that are woven, embroidered, dyed, printed, and painted. India's history of producing excellent textiles is as old as its civilization. Cotton fabric that has been colored has been found to date back to the Indus Valley civilization. Indian dyers had a good understanding of the technique of using mordants for dyeing some 5,000 years ago.

Pethapur, situated 40 km away from Ahmedabad, is the only surviving center of wood block carving in Gujarat. The Gajjar community of block makers in Pethapur village was closely involved with the Saudagiri trade with the Kingdom of Siam (modern-day Thailand). This trade continued vigorously until the advent of World War II, which signaled a death blow to the Saudagiri trade route. It was this trade that made Pethapur a woodblock-making hub. The development of the screen printing industry almost during the same period in 1945 caused a gradual decline of this craft.

As the number of craftsmen has decreased to less than twenty, efforts are needed for the better survival of the craft and the craftsmen. There was also a need to upgrade and expand the craft and the craftsmen for its survival in this globalized economy. Enhancing the capacity of the craftsmen could lead to better development and survival. This would increase their work efficiency and expand their knowledge. Capacity building in various areas needed to be done, such as craft skills, technological upgradation, and financial assistance. It was identified by the researcher that ergonomic analysis, technological upgradation, and awareness of various beneficiary schemes are the different areas to build capacity amongst craftsmen.

The craft of wood block making is performed by sitting continuously at the same place and in the same posture for an extended period of time. This resulted in a number of work-related musculoskeletal disorders (MSDs). Studying the ergonomic risks related to the craft would surely help in increasing the work efficiency of the craftsmen.

Making wood blocks is a laborious and time-consuming craft. It requires skilled craftsmen. As discussed above, the number of craftsmen in this particular craft has

decreased, and a need for manpower arises to meet the target and increase production. Technological advancement is one of the ways to help the craft survive and motivate the craftsmen to perform better. The invention of computer-controlled (CNC) wood carving machines known as routers made the wood carving process fast, more precise, and crafting skills independent. (Lupupa C. and Moses K., 2019). Hence, an exploratory attempt using a CNC machine was made in the present study, and the opportunities and constraints of technological advancement were examined.

The handicraft sector has suffered as a result of its unorganized nature, with additional challenges such as a lack of education, a lack of exposure to new technologies, a lack of finance, bad infrastructure, and a lack of market information, among others. To overcome these obstacles, the Ministry of Textiles started so many schemes to support handicrafts, but these schemes are not accessible to the actual needy craftsmen.

The present study also included the component of imparting knowledge of various government schemes to the craftsmen by organizing awareness workshops, as it would also indirectly boost their capacity.

Promoting the craft is a method that the researcher firmly believes should be applied in order to sustain and raise awareness of the unique art of wood block making among the general public and children. Wood block-making crafts have received the Geographical Indication (GI) tag and are registered as Pethapur Printing Blocks. As wood block is not an end product, there is less awareness amongst people about this craft as compared to hand block printing. Hence, promotion of the craft using various methods by increasing its visibility and identity through physical reach as well as digital means should be done. The present study researcher has made an effort to promote craft in the best possible way to make people aware of and sensitized about the craft of wood block making.

5.2 Objectives of the study

5.2.1 To study the origin and history of the craft with special reference to '*Saudagiri'* prints and their trade

5.2.2 To study the socio-economic status of the craftsmen residing in Pethapur.

5.2.3 To study the changes that have taken place over the years in wood block making Craft

5.2.4 To analyze the work pattern of the craftsmen and their workplace using ergonomic approach

5.2.5 To explore the opportunities for capacity building by wood block makers in Pethapur

5.2.6 To promote the craft of making wood block into different platforms

5.3 Methodology

The main purpose of the research was to understand the evolution and undertake initiatives for the promotion of the wood block-making craft in Pethapur, which is on the verge of extinction. The goal was to perform a comprehensive examination of how wood blocks were manufactured and consumed in relation to man, material, method, machinery, and merchandise over a period of time. The analysis of historical and existing records would reveal the elements that influenced the growth and decline of the craft and craftsmen, allowing the researcher to better analyze their difficulties and expand their opportunities to enrich the craft for its continuity. Therefore, a mixed-methods approach was used to achieve the objectives of the study. The research consisted of historical research, ethnographic research, applied research, and descriptive research. The data was thus collected using a multi-methodological approach to gain a more comprehensive understanding of the research questions.

Promotion of the craft was planned to promote the craft and craftsmen in terms of increasing craft visibility, creating a digital identity for the craft, enhancing work efficiency, and building the capacity of the craftsmen.

Three areas were purposefully selected for capacity building, taking cognizance of their specific needs to advance the capacities of the craftsmen. The categorical areas selected were ergonomics, technology, and awareness.

Promotion of the craft was planned to spread awareness and make the craft visible digitally as well as by spreading knowledge physically to make the craft noticeable to target audiences using various promotional techniques. The techniques purposefully selected for the promotion were divided into two categories: increasing visibility and creating a digital identity.

The data collected to study the evolution and promotion of the craft was analyzed in the form of description, comparison, establishing relationships amongst the events that occurred, and supported with photographs, drawings, tables, and charts for better presentation and clarity.

5.4 Results and discussions

5.4.1 Evolution of the craft

Changes taken place in terms of community (men), raw material (material), tools and technique (method), design configuration (motifs), size and scale of blocks (magnitude), and merchandising:

- **Community shift (Men):** Initially, the craft was governed by the Gajjar community, and at present it has been taken over by the Prajapati community. Only one craftsman is left from the Gajjar community. Several causes affected this change.
- A decrease in the number of craftsmen could be affected by higher education, new and better opportunities for desk jobs, and low wages for tedious work.
- **Raw Material**: Higher wood cost, unviability, and degraded quality of wood. According to the craftsmen, wood quality and availability are also affected. Due to the increase in wood prices, since the last twenty years, wood block makers have started making handles separately to reduce their thickness from 6 inches to 3 inches.

  Tools and Process (Method): Since the last two decades (from the year 2010) the craftsmen have started using electric tools such as hand drill machines, grinders, trimmers, etc. Trimmers have been used for finishing a wood piece. A trimmer is used for removing negative areas in filling blocks. Hand drill machines are mainly used for making air holes in a block, which is a very tedious job. The use of such tools has saved energy and time by increasing productivity and maintaining quality.

- **Motif: Designs made (Motif):** Earlier designs were at least three to seven colours, with the background having human figures, animals, and birdmotifs with borders, as they were mainly printed on sarees. The designs were intricate and closely arranged. It was also observed that minute details, the number of colours used in designs, and figurative motifs disappeared gradually during this time. Simple designs with minimum details, bold lines, and single to four colours were observed. Border designs have mostly disappeared.

- **Size of the blocks(Magnitude)** Since the *Saudagiri* trade, several changes have been observed in the size of the blocks. The changes observed were in

the length, width, thickness, and carving depth as well. Earlier, the size of the blocks was 3.5” x 3.5", and gradually it was increased by 4” x 6” to 5” x 6". At present, the blocks range from 5” x 6” to 8" x 6”. The reason behind the increase in size was to increase production rate. More time was consumed in printing a cloth with the small size of the block, so in order to increase the printing speed, the size of the blocks was increased.

- Demands for wood blocks increased.
- Craftsmen started giving out the blocks for carving in Ahmedabad (outsourcing).
- The *Saudagiri* trade was a hundred years old. Which has made Pethapur a block-making hub. After studying the chronology, it was observed that for the past seventy years, Kachchhh has been a prominent center for Pethapur wood blocks, which would complete 100 years in the near future. Hence, it could be said that “*Saudagiri has made Pethapur a wood block-making hub, and after that, it is Kachchh that has repeated the history and survived the craft of block-making in Pethapur*."

5.4.2 Promotion of the craftsmen

5.4.2.1 Ergonomic analysis

It was revealed in total that most respondents prioritized a consistent work environment, utilized mechanized tools, and were conscious of the importance of comfort in their workspace. Environmental factors, particularly humidity, emerged as critical considerations impacting production. The diverse distribution of job tasks underscored the specialized nature of wood block making, with craftsmen contributing to different stages of the intricate process. These findings provided valuable insights for implementing targeted interventions, improving working conditions, and preserving the rich tradition of wood block making in Pethapur.

The craftsmen were required to perform repetitive activities for extended periods of time while sitting still, which caused discomfort in various body parts.

Based on the results of the RULA, the data suggested that there was room for improvement in the ergonomic conditions related to upper limb postures for the

craftsmen. The majority, i.e., nine and six, respectively, of fifteen participants fell into the "Further Investigation and Change May Be Needed" and "Further Investigation, Change Soon" categories, indicating a need for attention to address potential ergonomic risks related to upper limb posture. Significant ergonomic risks and hazards have been identified after an ergonomic assessment. These were classified in order of urgency (immediate action required), and possible solutions were given to overcome the ergonomic risks and increase productivity. The proposed suggestive measures were derived from research on related issues that applied and assessed ergonomic principles.

Factors identified:

Some workshops were found to have less sunlight; hence craftsmen had to work outside the workshop.

During monsoon season, due to cloudy weather, less sunlight is observed, which creates work hindrance.

Wood dust produced from grinding applications may cause a range of health hazards since grinding dust tends to affect the respiratory system.

Craftsmen need to make adjustments to the existing table to adjust its height and overcome the limitations of both kinds of tables.

The craftsmen were not aware of ergonomic risks and occupational health hazards.

A change in the work pattern of craftsmen should be needed. It was observed that craftsmen used to take one long break of two hours at noon, and working hours were 8 in the morning to 6 in the evening.

5.4.2.2 Exploration with technology

The second area was selected for building capacity to overcome the shortage of manpower. The purpose of the exploration of the CNC machine was to analyze the best possibility of using technology that helped the craftsmen by assisting them in the carving process, increasing production, and reducing labor by saving their time and energy without eliminating the identity of traditional wood block making. An exploration was done by making a wood block on the CNC machine. After that, it was compared with a hand-carved wooden block, and analysis was done. A finished wood piece was chosen for machine carving. For both types of wood blocks, the time spent sketching the design, carving time, carving accuracy, carving depth, and cost were measured and compared. The developed block was

shown to the craftsmen as well as a CNC developer, and they discussed its limitations and possibilities for upgrading with technology.

Carving Time, The time required to create a design (job-making or drawing) for both procedures was calculated to be the same, which was 90 minutes. The manual carving process took 90 minutes, and the CNC machine took 60 minutes. It was less time recorded than hand carving.

Carving accuracy, which includes evenness, fineness, sharpness, and carving depth, was used to assess carving quality.

Evenness: The consistency of the carved lines and curves determined evenness.

Fineness: The exquisite and minute design elements created by carving

Sharpness: The precision with which each design shape, line, and corner is carved.

It is observed that every single detail was meticulously crafted, although slight unevenness in the carving was observed. The sharpness of triangles and lines was accurately carved out, although the lines carved out were uneven. In terms of evenness and fineness, an even and fine carving was observed. Machines, however, did not achieve precision in shapes such as triangles and lines. The CNC-carved-carvedwas unable to achieve a flawless triangle and line corners on the block's left side. It was carved out with rounded edges.

Depth of carving: A hand-carved wood block had a carving depth of 12.7 mm, whereas a machine-made wood block had a carving depth of 5 mm. A hand-carved block was discovered to have more depth than a block developed on a CNC machine.

Both the wood blocks were shown to the craftsmen in Pethapur, and their feedback on the created wood block was gathered by comparing it to the hand-carved wooden block. Sharp corners, as well as carving depth, need to be corrected.

Making of design (Drawing)

Printers delivered the drawings for producing wood blocks to the block makers with their requests and specifications, such as size, colour, and adjustments to be made. Block makers adapt or create new designs based on the client's specifications by hand illustrating, photocopying, or tracing paper. They used to archive all records of the designs they created for future use.

Every time a design is sent to make a block, it is unique. As a result, each order necessitates a fresh drawing or alteration. The case study revealed that the younger generation of craftsmen lacked drawing skills. As mentioned in the steps of creating wood blocks on a CNC machine, design making (job making) was essential as well. It

was created with the design software AutoCAD. Software-created designs can be preserved and modified in the future with minimal effort. It helps the person who lacks drawing skills. As a result, the young generation of artisans can be equipped with drawing abilities through mastering design software. It would save them time and increase work efficiency.

Carving process: The carving time by hand was 90 minutes, while the carving time by machine was 60 minutes. Which was less than the carving by hand. As previously stated, the machine-carved woodblock was partially carved, whereas the hand-carved block was perfectly and accurately carved in 90 minutes. It was discovered that machine-carved blocks need to be revised by the craftsmen to make them suitable for printing. Therefore, the efforts and time would be doubled in carving.

As per the view of an expert, it would be impossible to achieve precise angles and shapes with a CNC machine (see plate 4.15). Moreover, the highest carving depth achieved by the machine was 8 mm due to the strength of the tool, as greater depth could lead to tool breaking. The maximum fineness of carving achieved by CNC machines was limited to 5 mm, whereas in hand carving, a hair-like thin line is possible with a 12.5 mm carving depth. The unevenness observed in the carving of lines in a hand-carved block is the beauty of hand carving, which could not be achieved by machine. These are the limitations of a CNC machine.

Costing:

The hand-carved block was less expensive than the machine-made block. The cost here was evaluated only for the drawing and carving phases (Ref. Table 4.3). Job creation in CAD was the more costly aspect of machine-made blocks. A CNC machine costs between 8,00,000 and 10,00,000 INR. Machine operation and maintenance need to be considered since they necessitate adequate training. The craftsmen could not afford to work with CNC machines due to limited workspace and financial resources.

Limitations:

- Lack of capital to purchase and maintain the machine
- Only roughing (partial carving) was possible
- Training required
- Job making (design making) need to be done before programming
- Lack of enough workspace

Best possibilities identified for upgradation:

- Training in design software such as AutoCAD, Adobe Illustrator, and Adobe Photoshop would be the best possible way to make the design process faster by saving time. Craftsmen also practice the designing part after their working hours. This would increase production and work efficiency.
- Further research by exploring different designs on CNC machines with different drills and cutters, carving accuracy, carving depth, and carving time should be studied.
- If roughing can be done for the craftsmen through a CNC machine, then craftsmen need to work only on the finishing part, such as achieving the right carving depth and working at sharp angles. by not eliminating the beauty of hand carving.
- In the future, a common CNC machine could be set up amongst the whole craftsmen, and everyone can use it according to their requirements under the government subsidy.

5.4.2.3 **Imparting knowledge of various Government Schemes**

There were a number of schemes found appropriate, but the requirements and eligibility criteria vary. For that purpose, researchers visited various government offices to get guidance on the same. It was found that during a visit to Udyog Bhavan, *Hastkala Setu Yojna*, various schemes were covered, and they provided guidance to the craftsmen. Hence, by collaborating with *Hastkala Setu Yojna* and its implementing agency, The Entrepreneurship Development Institute, awareness workshops were organized.

Workshop 1 Awareness workshop (*Hastkala Setu Yojna)*

Stage 1: An introductory workshop cum meeting with the craftsmen

It was the first meeting workshop organized, and who could join was arranged at Satishbhai Prajapati's workshop by the district-level officer, Mr. Jignesh Kumar, and the researcher on October 8, 2022.

Highlights of the workshop

- Information from Hastkala Setu Yojna about the implementing agency, Entrepreneurship Development Institute (EDI), Ahmedabad.
- Enrolment procedure
- Problems faced by the craftsmen and their present situation
- Planning of a second workshop with a state-level team

Stage 2: Both district and state-level teams, with the officers invited as resource persons, are needed in order to get comprehensive knowledge and make the craftsmen familiar with government schemes and Hastkala Setu Yojna. It was held on December 14, 2022, at Ramji Mandir, from 2:00 p.m. to 6:00 p.m.

Objective:

- To make craftsmen aware of the entrepreneurship development scheme.

To focus on collaborative work with EDI for the upgradation.

Highlights of the workshop:

- Details of the Entrepreneurship Development Scheme
- Developing new useful products of wood blocks other than small wood blocks to expand the market
- The credit and loan system of Hastkala Setu Yojna provided information on financial support and subsidies given to the craft cluster, such as infrastructure development, sourcing of raw materials, tools, and training of new craftsmen.
- The researcher had an opportunity to interact with the government and craftsmen on the same platform. The difficulties and current condition were communicated to the team, and the researcher explained the areas where the craftspeople required assistance based on her research.
- The feedback of the participants was collected on a feedback form developed by the organizers.

Workshop 2: One-day workshop on "Capacity building workshop for GI artisans of Gujarat" organized by Gujarat National Law University (GNLU)

With the collaborative effort of EDI and researchers, craftsmen from each workshop were made to participate in a one-day workshop on "capacity building for GI artisans of Gujarat," organized by Gujarat National Law University (GNLU), Koba, Gandhinagar, on March 28, 2023.

Objective of the workshop

The workshop was specially organized for the two GI-registered craft and craftsmen: Pethapur printing blocks and Mata-ni-pacchedi. It was aimed at making craftsmen aware of the use and importance of the Geographical Indication (GI) tag and logo, followed by other objectives to impart knowledge of digital marketing and its procedures, branding, and Intellectual Property Rights (IPR).

Evaluation of the workshop

- **Learning outcome:** Participants gained knowledge of various digital marketing platforms, both free and paid. Craftsmen learned particularly about the craft of block making, as it is a B2B (brand-to-brand) business.
- It was very interactive, and the craftsman and researcher raised many questions, clarified the usage of the GI tag, and increased its effectiveness.

5.4.3 Promotion of the craft

5.4.3.1 Details of developed Do-It-Yourself kit

To make craft more noticeable to the target audience and demonstrate knowledge of craft skills to a larger audience, a craft demonstration was done, and a DIY hand block printing kit was developed. A survey was done to study the available hand-printing kits on the market. The kit was prepared by developing accompanying elements such as wood blocks, booklet development, and other elements of the kit such as ink for printing, a sponge for padding, an imprint of a wood block, and an article or product to be oriented.(Plate: 4.136)

Plate 4.136: Contents of a developed DIY- hand block printing kit

Display of developed kit:

Developed kits were distributed amongst craftsmen as well as displayed at various workshops organized at various places such as GNLU, Gandhinagar, Navjivan Trust, Ahmedabad, and Indubhai Parekh School of Architecture (IPSA), Rajkot, and feedback from the people was collected in the form of notes written by the visitors.

5.4.3.2 Craft Demonstration

In order to promote the craft of wood block making and increase its visibility, the craft demonstration method was employed. The location for the craft demonstration was selected in Ahmedabad as a large number of people from various backgrounds could make a visit and it was convenient for the artisan to travel from Pethapur. A craft demonstration was arranged at the Navjivan Trust, Ahmedabad, in collaboration with the Aadhar Trust, Ahmedabad, on May 21, 2023. Sunday, 6:00 p.m. onwards

The event successfully took place, and the imitation was appreciated. People were not aware of wood block making as an important element for hand block printing. Many people suggested organizing such events frequently, at regular intervals, at various places. Remarkable feedback as motivation was received through comments on the Instagram account of Mr.Pankaj Shah connected with the Aadhar Trust by Shri Jaya Jaitley ji. Ms. Mallika Sarabhai has also personally messaged and given an open invitation to conduct such workshops at Darpan Academy, Ahmedabad.

5.4.3.2 Create digital identity

Promotion of the craft was done in two parts: one by increasing visibility through physically reaching out to the audience, and the other by creating a digital identity. The digital identity of the craftsmen was created by creating commercial cards and website development.

a Development of commercial cards:

A digital identity for the promotion of a craft was created by designing a comprehensive and visually appealing representation by highlighting the craftsperson's skills and uniqueness. For each workshop, a unique visiting card was redesigned by adding the GI logo and OR code containing the detailed portfolio into the card. Each card was designed by incorporating all the described elements. This not only promotes the craft but also establishes a strong and memorable presence. After scanning the QR code, one would be directed to the artisan's profile. One example has been shown in Plate 4.137.

Plate 4.137 : visiting card with QR code

4.5.2.1 Development of website

The second method is to promote the craft of wood block making by developing an informative website. It contained information on all the existing workshops and artisans. From the review, it was found that several websites were there providing information on block making and the craftsmen of Pethapur. The website containing information on craft as well as details of all the existing craftsmen was hard to find. Therefore, a common informative website was designed dedicated to wood block making crafts and the craftsmen of Pethapur.

- Registered Domain for the website: **pethapurprintingblocks**

- URL: www.pethapurprintingblock.com
- Content of website: The website was contained with fourteen pages and in English language. - The details of each page has been listed below with the screenshot of pages
- Date of Publishing: The URL was live from 25th of May, 2023. The actual launch of website was on 27th July.

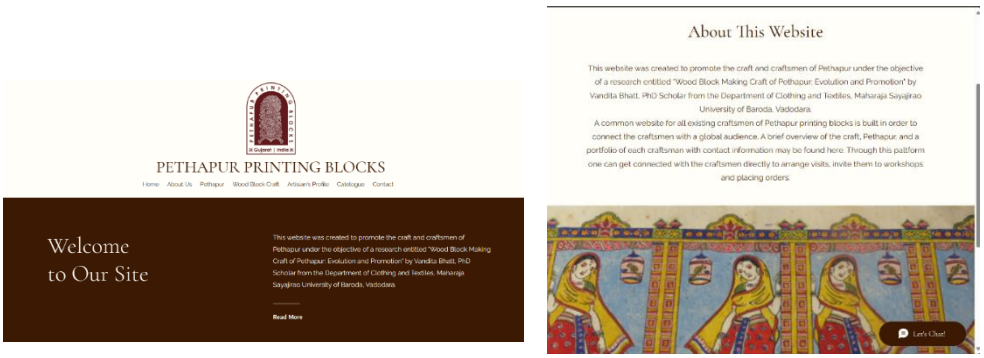

Plate 4.138: Home page of the website

Conclusion

Wood block making craft of Pethapur is famous for its finely carved wood blocks over the years. It is on the verge of extinction and a serious action was needed to be taken as there are only a handful of craftsmen left. The present study was aimed to understand the problems and prospects of the lone traditional center of wood block making in Gujarat through its evolution over a period of time and promotion of the craft as well as the craftsmen through ergonomic analysis and capacity building.

It was concluded from the study that craft has undergone major changes after the *Saudagiri* trade till date such as community shift, less interest in younger generations to take the craft forward, less profit earned against the labour involved, cost, quality and availability of raw material.

It was analyzed from the ergonomic study that work place needs to be re-arranged using ergonomic principles and the table used in making block need to be re-designed with adjustable height.

From the comparative analysis of traditional wood block and the wood block developed on CNC m/c, was discovered that the learning of design software such as Auto CAD, Photoshop proved to be the better option to enhance the work efficiency against the manual designing. The awareness camp organized for the promotion of the craftsmen was successful and the craftsmen were satisfied with the information and

knowledge shared by the Government officials. They agreed to participate in such workshops and camps organized in future.

It is also established that, although Pethapur was the only location for wood block production that survived in Gujarat, the craft of creating wood blocks did not originate there. However, at present with the decreasing number of craftsmen it is on the verge of extinction. After studying aspects of evolution of the craft covering various aspect such as community practice, raw material, tools and technique, designs, size of the blocks and its trade practices; it was found that it has huge potential to grow. The wood blocks of Pethapur are famous for its fineness and precision. The craftsmen's good knowledge of geometry is enough to fulfill variety of design requirement in hand printing. It can be sustained through planning various promotional strategy for the craft as well as craftsmen. The major concluding points of the study are as follows:

- Wood block making was not the ancestral craft of Gajjar community, as they were originally the carpenters. These craftsmen were involved in carpentry, making and repairing agricultural tools and in construction work. It all started with the *Saudagiri* trade which has made Pethapur a block making hub as well as beginning of block making. It was the period that made *carpenters to block makers and finally transformed them in to skilled craftsmen.*
- Since the conclusion of the Saudagiri trading era, the craft has experienced significant modifications. The craft's development and decline were impacted by these modifications. The Prajapatis eventually seized control of the craft, which was previously overseen by the Gajjars.The main hubs for the sale of Pethapur wood blocks were Bombay in particular, along with Jetpur, Rajkot, Vadodara, and Ahmedabad. During the post-independence era, Pethapur wood blocks were primarily marketed to Bombay customers and printers. During that time, a large number of block makers relocated to Bombay and employed as block makers in printing workshops.
- Gradually with establishment of capital city Gandhinagar, Government Printing Press and Gujarat Electricity Board (GEB) located close to Pethapur, gradually provided improved employment prospects for craftsmen. As a result, a large number of craftsmen and hired labourers abandoned their profession and began working for the government in order to improve their standard of living.

- ***Beginning of another era***: New laws were enacted following independence, and the All India Handicraft Board launched a campaign to conserve and promote the nation's handicrafts and handlooms. The resulted in rise of hand printing units and thus the need for wood blocks. In Ahmedabad, the National Institute of Design (NID) worked to bring back the Ajrakh print. The block makers got in touch at this period to create blocks with newly altered designs for the Ajrakh print. One may say that Pethapur, particularly the Ajrakh print, became the hub of the Kachchh region around 1960. For block makers, this marked the "beginning of another era after Saudagiri trade." Currently, Kachchh is a major hub that uses Pethapur's wood blocks. The production of Ajrakh blocks in Pethapur dates back seven decades.
- ***Decrease in number of craftsmen****:* Craft has survived during these years but the number of craftsmen decreased to less than twenty due to higher education, better job opportunity, less profit against tedious work.
- The ***factors that affected the decline*** of the craft were identified such as
    - Higher wood price
    - Low wages
    - Lack of unity amongst craftsmen
    - Lack of collaborative effort
- Every craftsman had done their own work. No uniform system or pattern was seen. This can be one of the causes of the downturn.
- ***Outsourcing of the blocks:*** Just because there are fewer craftsmen working in the field, they are unable to fulfill the large volume of orders and execute these within the time frame. As a result, Pethapur has begun outsourcing work from block makers in Ahmedabad who have moved there from Farukhabad.
- ***Combining technology****:* For the purpose of polishing and preparing wood blocks, craftsmen are now employing electric drills, trimmers, grinders, and drilling machines. Time and energy have been saved as a result, and output has grown while retaining quality.
- ***Changes in traditional practices****:* The block-making process underwent modifications to ensure its survival and to lower production costs in order to increase profit. The wood blocks that were once three inches thick have now been thinned down to 1.5 inches due to the handles inside carving in the wood

component. Currently, handles are attached individually by buying teakwood sticks especially for the purpose. The increased expense of wood led to this action. Two pieces of wood are prepared for the price of one.

- Various promotional strategies employed and analyzed to build the capacity of the craftsmen can be applied further for the growth and upgradation of the craft and it has opened new doors towards the better survival of the craft.
- It was concluded from the ergonomic study that changes in work pattern, better lighting arrangement, awareness on ergonomics, use of suction device for collecting wood dust, designing adjustable table by maintaining the traditional design led to better work efficiency and increase productivity.
- An exploration was done by creating the wood block using computer numeric control (CNC) machine in order to reduce the physical labour and work load amongst the workers. The results showed that it has not achieved the level of hand carved wood block. Training in design software such as AutoCAD, in design, Adobe illustrator, Adobe Photoshop for the young craftsmen would be the best possible way which would make the design process faster by saving time. Craftsmen could build and improve the skills of designing after their working hours. This would increase production and work efficiency and overcome the problem of drawing skill.
- • Educating people about different government programmes through the holding of workshops in partnership with EDI and Hastkala Setu Yojna in Pethapur. This was the first time that the government and artisans were brought together on one platform, where issues were discussed and solutions were exchanged. It was a success, and craftsmen expressed interest in signing up for the programme in order to receive additional support.
- Attending a session on Geographical Indication (GI) awareness had a positive effect on the craftsmen. It has made the use of the GI logo and its significance more clear to them.
- All promotional methods employed to advance the status of the craftsmen was carried out with success, yielding positive outcomes and opening doors for additional growth. The craft was promoted by a variety of channels, including virtual and physical media. Reaching out to different target groups, the produced DIY-kit was displayed and the wood block making craft was promoted. The event was a success, and credit was given for the initiative. In actuality, few people

knew that creating wood blocks was a crucial component of hand block printing. People proposed holding such gatherings often, at different locations, and at regular intervals.

So, overall, it can be concluded that the appropriate planning of promotional strategy and collaborative efforts led to overcoming the challenges and better survival of the craft.

Suggestions and Recommendations

Following can be the future initiatives, research, policies, and strategies to further enhance the sustainability and growth of the wood block making craft in Pethapur

- Training of new group under block making can be done by motivating people from Pethapur village itself.
- Women should be trained in wood block making.
- Explore initiatives for building unity and collaborative efforts among craftsmen, possibly through the formation of associations or cooperatives.
- More research on the design geometry of carved blocks could be conducted.
- Explore the possibility of introducing sustainable wood alternatives or recycling methods to reduce the impact on the environment.
- Continue research on the integration of technology, such as CNC machines, in wood block making, addressing the limitations identified in the current study.
- Develop training programs for craftsmen in design software (AutoCAD, Photoshop, etc.) to enhance their skills and improve overall efficiency.
- An ergonomic intervention could be carried out by utilizing the remedies suggested in the present study and its effects should be measured.
- Investigate the potential for educational partnerships between craft institutions and traditional wood block making centers.
- Wood block making should be included in the curriculum in various Industrial Training Institute (ITI) under the subject of carpentry or as an elective.
- Explore avenues for international collaborations and exposure to enhance the global recognition of Pethapur wood blocks.
- AI design technologies can be explored to instruct artisans in drawing techniques.