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Sustaining Farasi Weaving in Rural Sindh, Pakistan: Traditional Knowledge, Artisan Livelihoods, and Market Challenges

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ABSTRACT

Farasi weaving is a traditional craft activity that is related to making durable animal fibre based floor covering products in rural areas of Sindh, Pakistan where it is practiced by the household. Although the craft has cultural significance and livelihood value, it still suffers from low participation, low income, long production process, poor market access and few institutions. The present study documents the Farasi production system of Bagheli village, Badin District and discusses the social, technical and economic situation of its continuation. This was done through repeated field visits, direct observation, interviews, group discussions, photographic documentation, and a structured questionnaire, and the approach was a qualitative-dominant case-study. The results indicate that the production is structured according to household division of labour. Fibre collection, preparation and spinning are mainly done by men and older family members, while women are responsible for the primary weaving operations. Skills are mainly passed on from parents and elders, showing a high level of reliance on intergenerational family learning. The majority of artisans surveyed indicated low monthly income and marketing was mainly local and through the local system. Restricted market access and the time needed for production were identified as significant bottlenecks. The study comes up with the conclusion that Farasi is not only a traditional cloth product but it is also a knowledge and livelihood system which is still alive. To ensure its continuity, it must be documented, skills need to be transferred effectively, the product adapted by artisans, women need to be increasingly involved in commercial decisions and there is a need for ongoing market development.

Keywords: Farasi Weaving, Traditional Handicrafts, Sindh, Rural Artisans, Intangible Cultural Heritage, Women Weavers, Artisan Livelihoods, Craft Sustainability

Introduction

The traditional handicrafts are not only the products of traditional handicrafts, but they also carry the knowledge of traditional handicrafts. They represent the product of experience gained over time in terms of materials, tools, techniques, design, local vocabulary and social organisation. In many rural communities, this knowledge is passed from person to person, and from generation to generation, through observation

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and participation within families and not as a result of formal education. This system can maintain craft practices through generations, but loses its strength if young people are moving out of craft work or if craft practitioners are no longer able to make a decent living from their work [1]–[4]. Recent research considers traditional craftsmanship as a form of living cultural heritage, a field that relies on more than documentation in order for its continuity. Active practitioners, intergenerational learning, economic viability, community participation, innovation and institutional support are the ingredients needed for sustainable continuity [1, 2, 5-10]. Knowledge of how to make a craft can be lost and yet the object remains, in a museum or a private collection. Safeguarding is thus protecting the environment for practitioners to produce, teach, adapt and benefit from the knowledge they possess. Especially small rural craft systems are affected by economic pressures. Artisans can have a lot of technical knowledge, but have low market access, weak bargaining power, and rely on the intermediaries, low product visibility, and lack of knowledge about the changing demand of consumers [3] [11] – [18]. The continuity of craft-based livelihoods is not just a matter of craftsmanship but also of social, organizational, market, technological and individual factors, as revealed by recent research on artisan entrepreneurship. The present study is based on Farasi weaving of Bagheli village in Badin District of Sindh, Pakistan. Farasi is a durable, hand woven floor covering in the study community which is made from animal fibres of sheep, goats and camels. Production comprises of fibre collection, washing and soaking, drying, beating, manual spinning, preparation of colours/dyeing, warp setting, weaving, pattern making and finishing. This work is integrated in the household organization and relies on various roles of men, women and older family members. The Farasi products are very different when it comes to visual complexity. While some opt for plain striped designs, others feature repeated geometric patterns, borders, diamonds, and contrasting colour combinations.

(a) (b)

Figure 1. Examples of Farasi products documented during fieldwork: (a) elaborately patterned Farasi and (b) simple striped Farasi. Source: Authors' field documentation.

Farasi is important because it combines the material knowledge, cultural expression and livelihood potential. But, the field evidence indicates that the craft is in trouble. The involvement of younger people seems to be quite low, formal training courses do not exist, production is very time consuming and returns are not that high. The existing literature on traditional handicrafts offers valuable information on continuity

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of tradition, business models of artisans, women's involvement, co-development of handicrafts, and market development, though there is little documentation of handicrafts of Farasi. This research is thus an attempt to document the traditional production system and to investigate the factors influencing the persistence of the system. In doing so it sees Farasi not just as a floor covering for the rural sphere, but as a local knowledge system relating to materials, tools, household labour, inherited skills, design practices and market relationships..

Literature Review

Traditional craftsmanship has come to be increasingly understood as living cultural heritage as its importance is not only in the product but also in the knowledge that is needed to make it. Craft continuity is tightly linked with intergenerational transmission, participation of the community, cultural sustainability, education, innovation and institutional support as demonstrated by recent reviews [1]–[10]. This is especially the case for weaving traditions where knowledge of the choice of material, yarn handling, tension, colour and pattern building may be tacit and be learned through repetition. Loss of family-based learning is a serious issue as many crafts do not have formal alternative means for transmitting skills. As senior artisans grow in age, the knowledge of the craft may be lost if it is seen as a low-paying, time-consuming field by younger people. It is important therefore to highlight the complementary importance of apprenticeship, heritage education, systematic documentation and community-institution partnership [7]–[10]. Economic viability is also crucial. Lack of market access, low bargaining power, reliance on middlemen, poor business skills and lack of consumer market information are common challenges that have been highlighted in studies on artisan entrepreneurship [3] and [11]–[18]. These pressures are strongest in process that use more labour and where selling prices fail to reflect the time and skill of the production.

Women play a major role in a number of household-based textile systems, but technical know-how does not necessarily lead to involvement in pricing, marketing and enterprise decisions. Women artisans may be helped by better access to market information, digital means and tools, financial capability, networks and direct customer relationship, according to recent research [14]–[18]. The usefulness of digital platforms does not just come from having an online presence but also production capacity, product information, payment systems and logistics. Care needs to be taken with design adaptation as well. There can be positive effects on product development when artisans and designers collaborate, although externally introduced modifications can impact on the identity of crafts or marginalize the knowledge holders [5] and [6]. Likewise, increasing demand for natural fibres and natural dyes leads to opportunities, yet environmental claims must be backed up with information related to the composition of materials, mordants, use of water, fastness, safety, and repeatability [20]–[24]. Overall, the literature indicates that the continuity of craft hinges upon the nexus of knowledge transfer, economic sustainability, artisan involvement, suitable innovations and marketing. The present study attempts to do this in the context of the under-documented case of Farasi weaving in Rural Sindh.

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Methodology

Research Design and Study Area

Case-study with a qualitative dominant approach was adopted for the study. This was a suitable method as Farasi production relies on tacit knowledge, divisions of labour between households, locally-specific terms and communication, as well as processes that cannot be fully captured by questionnaire data. The field work was done in Bagheli village of Badin District, Sindh, Pakistan. Purposive sampling was used as those with relevant knowledge were focused among those who are directly or indirectly involved in fibre preparation, spinning, weaving and marketing.

Data Collection

The data were collected based on repeated field visits, direct observation, interview, group discussion, photo documentation and structured questionnaire. The observation was on fibre collection, washing and drying, beating, spinning, preparation of colours, arranging the looms, weaving and finishing. Learning pathways, household production roles, experience, income, marketing arrangements, youth participation and perceived challenges were explored through interviews. Finished products, traditional tools, design variations, colour related materials and selected stages of production were photographed. The visual records are kept as evidence as Farasi is a material and design knowledge that cannot be explained through text only.

Data Analysis

Qualitative material was clustered into four themes: social organization and skill transmission, materials and production, design knowledge and livelihood and market constraints. The results of the questionnaires were summarised descriptively in line with the percentages in the original field documentation. Because of the small and localized nature of the sample, no inferential analysis was performed.

Results and Discussion

Social Organization and Transmission of Skills

Farasi are produced primarily in households and not formalized industrial workshops. Gender, age, experience and skill divide the activities. Males and older household members are typically involved in collecting fibre, doing some of the preparation work and spinning, with women doing the major part of the weaving. The source field report notes that two women can work together, the more experienced artisan of which may assist with more intricate weaving processes. Of the respondents who were reported, 80% were female, suggesting that women were at the heart of the craft.

Table 1. Reported Age and Gender Distribution of Respondents

Age group	Male (%)	Female (%)
10–25 years	0	10
26–50 years	20	40
51–75 years	0	30
Total	20	80

The highest population was women in the age group 26–50 years followed by 51–75

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years. 10% of respondents were in the youngest category. There is weak generational replacement indicated by this pattern but only in a small sample. The field summary also indicates that 100% of the structured respondents acquired Farasi-related skills from their parents or elders.

Table 2. Reported Source of Farasi Skills

Source of learning	Respondents (%)
Parents or elders	100
Formal school or institution	0
Other	0

The finding shows high reliance on family based learning. This has traditionally helped to maintain local expertise and knowledge, but also makes it vulnerable if younger household members leave. The same issues are found in recent publications about craft continuity and heritage education, where active transmission plays a crucial role in the continuation of embodied skills [1] and [7]–[10].

Materials, Tools, and Production Process

The field evidence shows that the production of farasi relies on animal fibres, simple hand-operated tools and family labour. Goats, sheep and camels are said to be the sources of fibres. The term “wool” is used in the original field document as a general term and it is recommended that in the future, technical studies be made differentiating between sheep wool, goat hair, camel fibre and mixed yarns, as the different raw materials have different physical characteristics. During production a number of tools are used which are readily available locally. They are a slice called Kaatar or Katar, a wooden stick to beat the fibre called a 'beater', very basic wooden spinning equipment, dyeing vessels and basic manual loom structures.

(a)

(b)

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(c) (d)

Figure 2. Selected traditional tools and equipment used in Farasi production: (a) fibre-processing implement, (b) locally fabricated wooden component, (c) loom-related structure, and (d) yarn and colour materials. Source: Authors' field documentation.

The process starts with the harvest of animal fibre and/or cutting it. From reports, this is done primarily by male community members. The gathered material is cleaned and free of dirt and impurities by washing and soaking before being dried further.

The fibre is then beaten with a thin flexible wooden stick. The field account estimates that a beating time of about two to three hours is needed for about 5 kg of material. This stage can involve both male and female. This is an estimate and not a standard measurement. The prepared fibre is spun into yarn by hand spinning. The older male members were reported to be important with regard to this activity. The field account indicates that it may take about a week to produce enough yarn for a 4 × 8 ft Farasi reported. This suggests that the spinning operation is one of the key constraints in production. Natural fibre shades are cream, brown, dark brown, black and mixed tones. When needed extra colours are added. Participants recognized various local names for colour related materials such as Sao, Kirmichi, "Hira Kas", Nassi and Hydro.

(a) (b) (c)

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(e)

(d)

Figure 3. Locally identified colourants and dye-related materials documented during fieldwork: (a) Sao, (b) Kirmichi, (c) Hira Kas, (d) Nassi, and (e) Hydro. Source: Authors' field documentation.

All of the materials in Figure 3 should not be automatically identified as natural coloring. In the present study, their chemical identities were not determined and some of them may be commercial colourants or processing auxiliaries. This is significant with regard to the research work that is being done in the field of sustainable textile colouration which requires due consideration of the material, extraction, mordants, colour fastness, water consumption and process repeatability [20]–[24]. The last and most important step is weaving, which is mostly performed by women. The local names for these structures are Tana and Bana, as found on the field manuscript. The lengthwise or warp arrangement is called Tana and the transverse or weft related construction is called Bana. These words are a part of the language of the craft and should be carried over into future documents. The whole process is summarized in Table 3.

Table 3. Traditional Farasi Production Sequence

Stage	Main activity	Reported participants	Function
1	Fibre collection or cutting	Mainly men	Obtaining animal fibre
2	Washing and soaking	Household members	Removing impurities
3	Drying	Household members	Preparing fibre for processing
4	Beating	Men and women	Loosening fibre
5	Manual spinning	Often older members	Producing yarn
6	Colour preparation or	Household-based	Producing required colours

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	dyeing		
7	Warp preparation	Experienced artisans	Establishing structure
8	Weaving	Mainly women	Producing textile and motifs
9	Finishing	Household artisans	Inspection and preparation

The sequence shows that the Farasi production does not only happen during the weaving phase. One activity affects the quality and efficiency of other activities. The preparation of the fibres influences the spinning, the quality of the yarn influences the weaving and the colour and preparation of the loom influences the visual and structural result.

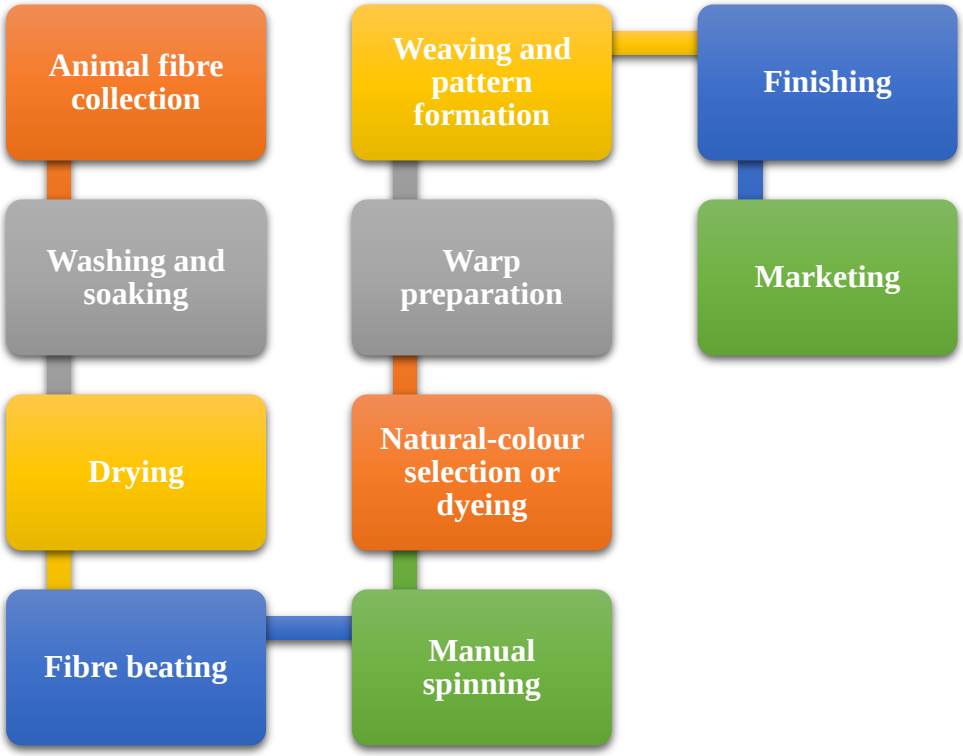

Figure 4. Reconstructed traditional Farasi production process based on field observation and artisan accounts.

The craft is a multi-stage production system as shown in Figure 4. Therefore, intervention designed to increase efficiency should be concerned with the entire process, not just the loom. Furthermore, any technological change, such as spinning or change in preparation of yarn, should be taken into due consideration as it can change the texture and look of the finished product. Craft innovation studies also highlight the importance of adaptation and respect for existing knowledge and involvement of the practitioner [4]–[6].

Motifs and Product Diversity

Several localised design names are recorded on the field documentation, such as Maseetirhi, Sayal, Tarmari, Bangalo, Gul Malook, Koluha and Tukro. Their names are part of the design vocabulary of the craft, though spelling should be checked with

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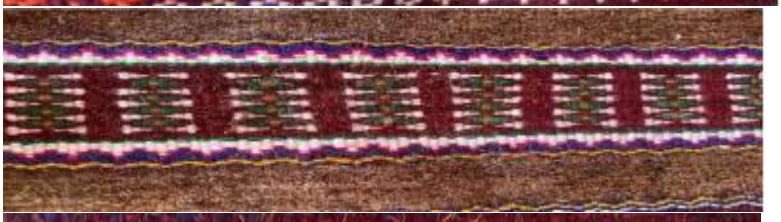
the senior artisans as there can be variations in the oral language.

(a)

(b)



(c)

(d)

(e)

(f)

(g)

Figure 5. Selected traditional Farasi motifs and pattern variations documented during fieldwork: (a) Maseetirhi, (b) Sayal, (c) Tarmari, (d) Bangalo, (e) Gul Malook, (f) Koluha, and (g) Tukro.

In figure 5 there is a lot of visual variation. In the recorded products there are

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differences in the geometric organization, borders, colour contrast, motif repetition and complexity. Some use linear or striped forms, others use diamonds, stepped forms, central motifs that are repeated, and elaborate bordered compositions. This diversity means that Farasi is not a uniform product. It is a catalog of knowledge, ranging from simple to complex designs, which for each one requires a different amount of production time. Simple or elaborate products may also have an economic significance as varying product design complexities may enable different price levels and markets. In future therefore, the documentation should include each motif as per the local name verified by the craftsman, structure, colour arrangement, frequency of use and number of remaining craftsmen to make that particular motif. While collaborative design can indeed enable new applications, when designers work with traditional craft systems, evidence of recent years indicates that artisan participation and fair value sharing are a must [5, 6].

Livelihood Conditions

The field data indicate that economic returns from Farasi-related work are modest.

Table 4. Reported Monthly Income and Routine Market Orientation

Indicator	Category	Respondents (%)
Monthly income	Below Rs. 1,000	10
Monthly income	Rs. 1,000–5,000	70
Monthly income	Approximately Rs. 6,000	20
Routine marketing	Domestic	100
Routine marketing	National/international	0

The highest income group mentioned was Rs. 1,000–5,000 per month. It is important to note that these numbers should be treated with care as it is not clearly noted in the original field manuscript whether this is individual or household craft income or the year of the survey. The trend, however, suggests that the economic payback is not great. This discovery is important because of the labour requirement. The stages of Farasi production consist of the collection of fibre, washing, drying, beating, spinning, colour preparation, loom setting up and weaving. The source field account indicates that a simple product could take about 15 days, a complex design could take much longer. That younger members of the community were not participating as much as they might have been is not unusual, perhaps due to low income and lengthy production. This is in line with recent studies that have demonstrated that the livelihood practiced by artisans could be constrained by increasing input cost, reliance on middlemen, erratic demands, poor market access, and competition from industrial alternatives [11]–[13].

Marketing and Major Constraints

The field summary is structured and shows marketing to be primarily of a routine nature and mainly domestic. Occasional external buyers and reported historical interest from Japan are also mentioned in the original manuscript. No transaction records are, however, offered to prove the existence of an export market that has been sustained. The most conservative explanation is thus that Farasi is still largely

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associated with local and domestic markets. Male household members were reportedly very important with regard to orders, the purchase of some inputs, and arranging sales. This setup can have a negative effect on the direct link between women weavers and the end consumers, even though women possess a lot of the know-how in production. Major challenges that were noted in the field summary are displayed in Table 5.

Table 5. Reported Challenges Affecting Farasi Production

Challenge	Reported share (%)
Limited market accessibility	44
High raw-material cost and low product price	12
Time-intensive production	32
Limited knowledge of contemporary market demand and technology	12
Total	100

Limited market accessibility was the biggest reported constraint, followed by time intensive production. All these problems are interwoven. A longer production cycle and lower demand in combination with low product prices could pose a greater risk to continuity, although slow production can still be economically viable if products command premium prices. The results validate current studies that have demonstrated that the mere occasional showing is not enough for craft to be an effective marketing strategy. Artisans require product information, proper costing, quality control, communication with their customers, order placing, payment arrangements and logistics [11]-[18]. While visibility can be improved with digital marketing, it's important to remember that it shouldn't be treated as a magic bullet. Artisan-enterprise research shows that digital participation needs to be backed up by business capability, production readiness, product presentation, payment systems and arrangements for delivery [15]–[18]. For Farasi, a well built catalogue, verified dimensions, good photography and realistic lead times would be more feasible than heading straight for large scale international e-commerce.

Implications and Limitations

The results indicated that the revitalization of Farasi should be targeted toward a few strategic priorities, rather than many stand-alone actions. Systematic documentation of tools; Production stages; Local terminology; Motifs; Oral knowledge while experienced practitioners are still active. The second is the intergeneration transmission. It is a direct threat to continuity as all structured respondents reportedly learned from parents or elders through apprenticeship in households. Senior artisans could thus be enlisted as paid trainers instead of being asked to impart specific skills without any remuneration. Economic improvement is also a must. Product prices should consider the actual cost of material and labour time and women weavers should get more involved in product development, product pricing and market communication. Smaller rugs, runners, interior pieces, and other uses which are becoming more popular in modern times could be facilitated by carefully managed

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collaboration with textile and product designers, while still maintaining the Farasi techniques which have been documented. The studies of artisan–designer collaboration do not support the notion of redesigning from an outside source but instead they supported co-creation.

Market development should focus in the first step on realistic domestic opportunities via the interior designers, the hospitality firms oriented to the heritage sector, the cultural institutions, the premium home-furnishing customers, and the ethical retailers. Once basic product information, quality, price and logistics have been developed, digital channels can assist with this process. The study is subject to a number of limitations. It is based on a small structured sample and partly dependent upon descriptive field records and examines one localised community. There are also disparities with regard to the numbers of participants and some percentage denominators in the original documentation. Information on income does not have a stated survey year and fibre types and colour materials were not scientifically tested. These restrictions should be clarified in the course of future economic, ethnographic and verification of raw documents.

Conclusion

Farasi weaving in Bagheli village is a system of material knowledge, domestic labour, inherited skill and cultural expression that is specific to the region. It involves everything from preparing animal fibres, hand spinning, colour development, to loom preparation, motif formation and finishing. Women are at the heart of weaving activities and other domestic members participate in various stages of the weaving process. The results reveal that low participation of younger groups, reliance on informal family learning, low economic returns, long production cycles, and restricted markets are all challenges to continuity. The challenge is thus not only to conserve the old textile product but also to maintain the knowledge and livelihoods which would enable its production to continue. A practical solution should include documentation, intergenerational training, better appreciation of the labour of artisans, wise adaptation of products, increase in the participation of women in decision-making processes in the markets, and development of the domestic market. Farasi must not be preserved as relic of the past. The long-term future of its existence relies on the ability of practitioners to share their knowledge, to make informed choices and to achieve a reasonable economic return on their efforts.

References

[1] C. Ding, N. A. Ismail, M. K. Hussein, and N. Hussain, “A systematic review of the traditional handicrafts preservation toward sustainable intangible cultural heritage,” *SAGE Open*, vol. 15, no. 3, 2025, doi: 10.1177/21582440251337837.

[2] N. Singh and M. Singh, “Traditional embroidery revival for sustainability: A systematic literature review and bibliometric analysis,” *Discover Sustainability*, vol. 6, art. no. 180, 2025, doi: 10.1007/s43621-025-00944-0.

[3] U. Hasanah, B. M. Sukoco, E. Supriharyanti, and W.-Y. Wu, “Fifty years of artisan entrepreneurship: A systematic literature review,” *Journal of Innovation and Entrepreneurship*, vol. 12, art. no. 46, 2023, doi:

Online ISSN 3007-3197
Print ISSN 3007-3189

10.1186/s13731-023-00308-w.

[4] M. Shafi, K. Szopik-Depczyńska, K. Cheba, C. Ciliberto, R. Depczyński, and G. Ioppolo, "Innovation in traditional handicraft companies towards sustainable development: A systematic literature review," *Technological and Economic Development of Economy*, vol. 28, no. 6, 2022, doi: 10.3846/tede.2022.17085.

[5] H. Liu, H. Alli, and I. S. M. Yusoff, "A thematic review on traditional handicraft from design perspective publications from 2002–2022: Analysis of trends for future studies," *Cogent Arts & Humanities*, vol. 11, no. 1, art. no. 2298084, 2024, doi: 10.1080/23311983.2023.2298084.

[6] J. Hu, E. Hur, and B. Thomas, "Value-creating practices and barriers for collaboration between designers and artisans: A systematic literature review," *International Journal of Fashion Design, Technology and Education*, vol. 17, no. 1, pp. 25–36, 2024, doi: 10.1080/17543266.2023.2228337.

[7] S. Brown and F. Vacca, "Cultural sustainability in fashion: Reflections on craft and sustainable development models," *Sustainability: Science, Practice and Policy*, vol. 18, no. 1, pp. 590–600, 2022, doi: 10.1080/15487733.2022.2100102.

[8] W. Knapik and K. Król, "Inclusion of vanishing cultural heritage in a sustainable rural development strategy: Prospects, opportunities, recommendations," *Sustainability*, vol. 15, no. 4, art. no. 3656, 2023, doi: 10.3390/su15043656.

[9] W.-J. Yan and K.-R. Li, "Sustainable cultural innovation practice: Heritage education in universities and creative inheritance of intangible cultural heritage craft," *Sustainability*, vol. 15, no. 2, art. no. 1194, 2023, doi: 10.3390/su15021194.

[10] M. Skublewska-Paszkowska, M. Miłosz, P. Powroźnik, and E. Łukasik, "3D technologies for intangible cultural heritage preservation: Literature review for selected databases," *Heritage Science*, vol. 10, art. no. 3, 2022, doi: 10.1186/s40494-021-00633-x.

[11] A. Dalal, S. Bhattacharya, and S. Chattopadhyay, "Hurdles to handicraft marketing for artisan entrepreneurs in an emerging economy," *Journal of Small Business and Enterprise Development*, vol. 31, no. 1, pp. 74–94, 2024.

[12] A. Dalal, S. Bhattacharya, and S. Chattopadhyay, "Ideating a framework for sustainable livelihood of handicraft producers at the bottom of the pyramid: A mix-method study from India," *Journal of Enterprising Communities: People and Places in the Global Economy*, vol. 18, no. 3, pp. 701–723, 2024.

[13] D. Deshmukh, C. S. Rajput, S. Das, and M. M. Alam, "Sustainability and livelihood of small-scale handicraft producers in India: A SWOT analysis of Dhokra artisans," *Social Sciences & Humanities Open*, vol. 10, art. no. 101160, 2024, doi: 10.1016/j.ssaho.2024.101160.

[14] U. S. Yadav, R. Tripathi, M. A. Tripathi, A. Kumar, and M. Mandal, "Evaluation of factors affecting entrepreneurship: A case of Indian women in the handicraft industry," *Humanities and Social Sciences Communications*, vol. 10, art. no. 480, 2023, doi: 10.1057/s41599-023-01882-w.

[15] U. S. Yadav, R. Tripathi, M. A. Tripathi, I. Ghosal, A. Kumar, M. Mandal, and A. Singh, "Digital and innovative entrepreneurship in the Indian handicraft sector after the COVID-19 pandemic: Challenges and opportunities," *Journal*

Online ISSN 3007-3197
Print ISSN 3007-3189

of Innovation and Entrepreneurship, vol. 12, art. no. 69, 2023, doi: 10.1186/s13731-023-00337-5.

[16] U. S. Yadav, R. Tripathi, A. Kumar, and R. K. Shastri, "Evaluation of factors affecting women artisans as entrepreneurs in the handicraft sector: A study on financial, digital technology factors and developmental strategies," *Journal of the Knowledge Economy*, vol. 16, no. 1, 2025, doi: 10.1007/s13132-024-01837-9.

[17] S. K. Deb, M. S. U. Rahman, and S. M. Nafi, "Promoting handicraft family business through digital marketing towards sustainable performance," *GeoJournal of Tourism and Geosites*, vol. 55, no. 3, pp. 1402–1413, 2024, doi: 10.30892/gtg.55340-1312.

[18] S. Guha, "Artisan entrepreneurship through social media campaigns," *International Journal of Entrepreneurship and Small Business*, vol. 51, no. 4, pp. 453–468, 2024, doi: 10.1504/IJESB.2024.136949.

[19] S. Gopura and A. Wickramasinghe, "Weaving emotions: Unraveling the emotional significance of Sri Lankan handloom artistry," *Journal of Humanities and Applied Social Sciences*, vol. 6, no. 4, pp. 315–330, 2024.

[20] B. Pizzicato, S. Pacifico, D. Cayuela, G. Mijas, and M. Riba-Moliner, "Advancements in sustainable natural dyes for textile applications: A review," *Molecules*, vol. 28, no. 16, art. no. 5954, 2023, doi: 10.3390/molecules28165954.

[21] A. D. Pranta and M. T. Rahaman, "Extraction of eco-friendly natural dyes and biomordants for textile coloration: A critical review," *Nano-Structures & Nano-Objects*, vol. 39, art. no. 101243, 2024, doi: 10.1016/j.nanoso.2024.101243.

[22] B. Titisari and P. Sinha, "A systematic review of natural colourants and trend forecasting practices for the textile and fashion industry," *Coloration Technology*, 2025, doi: 10.1111/cote.12836.

[23] S. Yadav et al., "Innovations in natural dye production: Bridging tradition and advanced technologies for sustainable textile applications," *Frontiers in Plant Science*, 2025.

[24] T. Nadeem et al., "Sustainable dyeing of wool and silk with *Conocarpus erectus* L. leaf extract," *Sustainability*, vol. 16, no. 2, art. no. 811, 2024.

[25] F. Giliberto and S. Labadi, "Harnessing cultural heritage for sustainable development: An analysis of internationally funded projects in MENA countries," *International Journal of Heritage Studies*, vol. 28, no. 2, pp. 133–146, 2022.