

The Clay Silk Route: Historical Syncretism, Artisan Livelihoods and Sustainable Revitalization of Terracotta Traditions in Jammu and Kashmir

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Abstract:

Terracotta the unglazed, fired clay medium historically referred to as "baked earth" constitutes one of the most resilient material markers of human civilization. While subcontinental terracotta scholarship focuses heavily on the mass-molded plaques of the Gangetic plains and the monumental temples of West Bengal, the trans-Himalayan frontier of Jammu and Kashmir (J&K) reveals a fundamentally distinct aesthetic and socio-economic evolutionary arc. This paper introduces "The Clay Silk Route" paradigm to analyze J&K terracotta not merely as a declining rural craft, but as a critical cross-cultural material archive that synthesizes Greco-Roman technical modes, Gandharan Buddhist monastic sensibilities, and localized indigenous folk traditions. Integrating a long-term historical analysis with a quantitative field survey of 214 traditional artisans across six districts of the Jammu Division (Jammu, Kathua, Samba, Rajouri, Poonch, and Udhampur) and cross-referencing qualitative baselines from the Kashmir Valley, this study uncovers deep structural asymmetries. Our empirical findings show that while the Kashmir Valley exhibits an unbroken operational continuity tied to functional domestic utilities, the Jammu Division suffers from severe structural attrition (14.49% operational abandonment), systemic educational vulnerability (43.93% absolute illiteracy), depressed income profiles (median monthly income of ₹8,000), and a restrictive reliance on seasonal ritual economies. This paper maps out these systemic vulnerabilities through a multi-factorial attrition framework. It outlines an actionable, multi-sector strategic roadmap aligned with India's National Education Policy (NEP) 2020 to transform this endangered heritage into a sustainable creative industry.

Keywords: Terracotta, Jammu and Kashmir, Clay Silk Route, Cultural Syncretism, Traditional Pottery and NEP 2020

1.Introduction and Theoretical Framework

Terracotta, commonly referred to as "baked earth" is one of the earliest and most enduring expressions of human creativity, embodying centuries of technological innovation, artistic excellence, cultural exchange, and socio-economic adaptation. Across civilizations, it has served not only as a functional material but also as an invaluable archive of historical and cultural development. Terracotta represents one of the earliest and most enduring ceramic traditions of the Indian subcontinent, providing valuable archaeological evidence for reconstructing ancient societies, technological developments, and cultural interactions (Allchin & Allchin, 1996; Dhavalikar, 1999)

1.1 The Epistemological Value of Clay

In the study of material culture, ceramic and terracotta artifacts serve as primary measures for tracking socio-religious transformations, technological adaptation, and economic trade networks. Due to the abundant availability of alluvial silt and its chemical stability once fired, clay captures the aesthetic and socio-political conditions of its production era.

In the broader context of South Asian art history, the evolutionary path of clay modeling has shifted in response to regional political economies. In urban environments like the Gangetic basin, Sunga and Gupta terracottas evolved into highly commercialized, mass-produced items through the widespread adoption of single and double molds, catering to secular urban tastes and expanding Brahminical pantheons. During the Sunga and Gupta periods, mould-made terracotta production achieved remarkable artistic refinement and large-scale dissemination (Banerji, 1994; Bautze, 1995). Also, the stylistic evolution of Indian terracotta reflects changing religious beliefs, artistic traditions, and regional socio-economic systems (Coomaraswamy, 1965; Desai, 1986)

1.2 Introducing "The Clay Silk Route" Paradigm

The geographic and ecological conditions of the Himalayan and sub-Himalayan belts dictated a different developmental trajectory for Jammu and Kashmir (Ahmad, 2024). Rather than adopting the mass-market, urban commercial models found in the plains, J&K terracotta emerged as a specialized artistic medium shaped by its position along trans-Himalayan trade routes, Central Asian migrations, and monastic institutional sponsorship. The region's Buddhist monastic establishments encouraged sophisticated ceramic production and artistic experimentation (Agrawala, 1947-48).

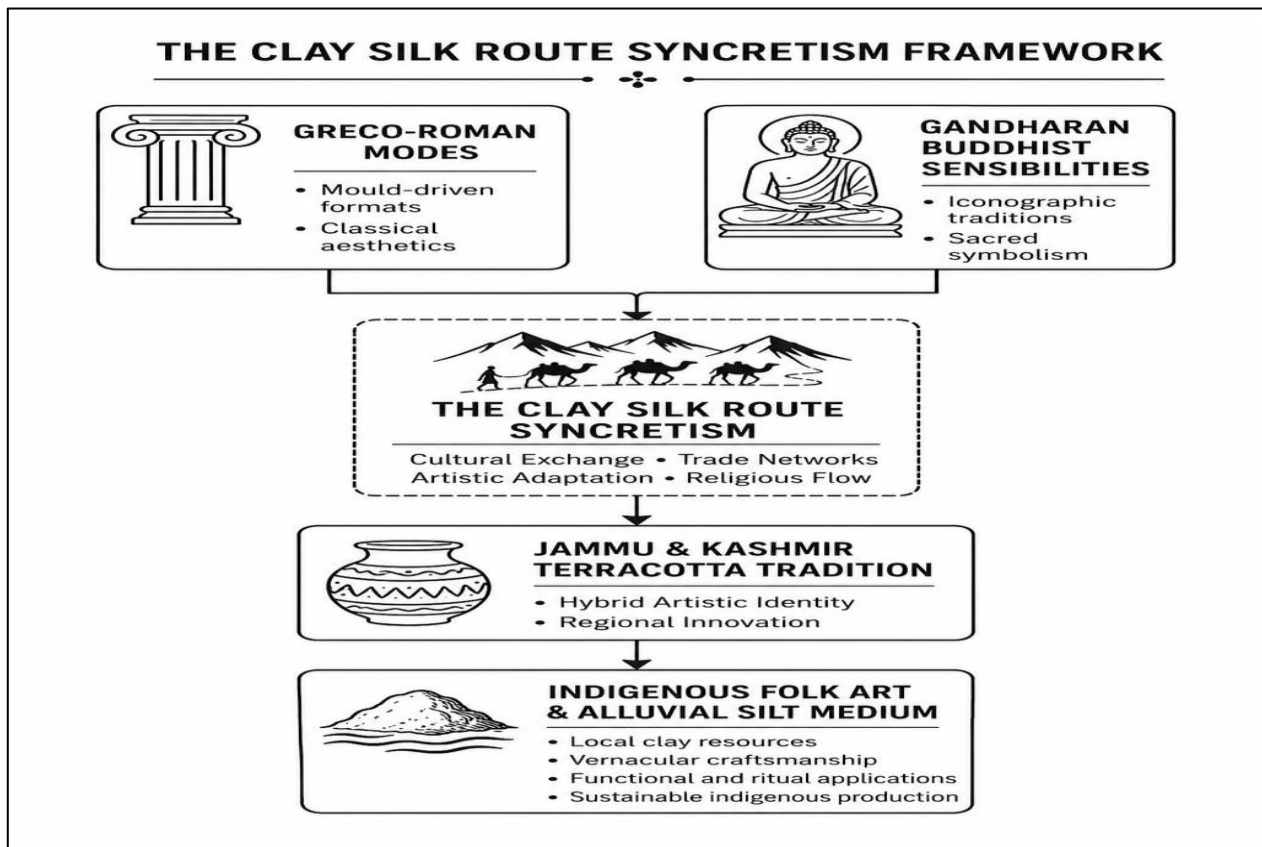


Figure 1. The ClaySilk Route Syncretism Framework

The present work therefore, proposes "**The Clay Silk Route**" as a framework to interpret this artistic tradition. We argue that J&K terracotta functions as a physical archive of cross-border syncretism, where Hellenistic structural profiles, Central Asian decorative choices, and Islamic glaze styles converged with indigenous folk practices. The Jhelum and Tawi river basins provided unique alluvial clay profiles that allowed local artisans to maintain a distinct material tradition through centuries of political transition. Today, however, this historic craft faces a sharp economic paradox: deep cultural and religious roots are directly undermined by low financial returns, creating an immediate risk of generational extinction.

2. Historical Genesis: From Neolithic Utilities to Monastic Masterpieces

2.1 Prehistoric and Protohistoric Foundations (3000 BCE – 1000 BCE)

The roots of clay fabrication in Jammu and Kashmir are found in the prehistoric settlements of Burzahom and Gufkral in the Kashmir Valley, along with matching techno-complexes in the Akhnoor and Jammu regions. Excavations at these sites show a clear transition from functional items to early ritual art:

- **Neolithic Stratigraphy:** The earliest levels yield coarse, handmade gray and buff ware pottery, constructed using pit-firing techniques without a wheel. These artifacts highlight early human adaptation to the cold, sub-Himalayan climate, focusing heavily on thermal water storage and food preservation.

- **Megalithic Shift:** By the mid-second millennium BCE, the introduction of the foot-turned wheel led to finer finishes, burnished surfaces, and basic animal figurines. These early works lacked the urban mass-production techniques seen in Indus Valley Harappan sites, focusing instead on domestic utility and local nature-based rituals.

2.2 The Classical Zenith: Kushan Monastic Landscapes (1st – 5th Century CE)

The artistic peak of regional terracotta occurred under the Kushan Empire and subsequent Huna periods. During this era, Kashmir served as a vibrant hub for international Buddhist discourse, culminating in the Fourth Buddhist Council. This institutional patronage transformed clay work from a rural craft into a monumental artistic medium.

Excavations at sites like *Harwan*, *Ushkur (Uskar)*, *Kanispur*, and *Ambaran (Akhnoor)* reveal an advanced terracotta culture closely integrated with Buddhist monastic layouts (*viharas* and *stupas*):

- **The Harwan Ceramic Pavements:** The molded terracotta floor tiles discovered at Harwan are unique in early South Asian art. Fired to a high ring-sound density, these tiles feature alphanumeric markings in Kharosthi script, indicating a highly organized, state-supported production system.
- **Iconographic Blend:** The decorations on these tiles merge diverse cultural elements:
 - Central Asian clothing (heavy tunics, trousers, and boots).
 - Greco-Roman profiles and postures (such as musicians, dancers, and figures holding wine jars).
 - Gandharan Buddhist concepts of physical form and contemplative expressions.
 - Local wildlife and plants (including lotuses, geese, and stags), representing a distinct regional identity.
- **The Akhnoor and Ushkur Heads:** The terracotta heads recovered from Akhnoor and Ushkur demonstrate complete mastery over the medium. Using a combination of molded cores and handmade details, artists achieved realistic human expressions and intricate hairstyles that equaled the contemporary stone sculptures of Gandhara.

2.3 Medieval Adaptation and Islamic Aesthetic Shifts (14th – 19th Century CE)

With the decline of the classical monastic systems and the rise of the Karkota and Utpala dynasties, state sponsorship turned toward monumental stone architecture. Terracotta was re-centered within village economies and domestic spiritual life.

The establishment of Islamic governance under the Shah Mir Dynasty in the 14th century brought fresh cultural influences from Persia and Central Asia:

- **The Glazed Tile Transition:** Court patronage shifted toward architectural innovations like glazed tiles (*Kashi-kari*), which decorate monuments like the tomb of Madin Sahib in Srinagar.
- **The Functional Separation:** This architectural shift split the terracotta craft into two distinct regional expressions:
 - **Kashmir Valley:** Potters focused on producing essential winter domestic objects, such as the *Kangri* (an earthenware fire-pot encased in wicker), large water storage jars (*Martaban*), and functional kitchenware (Koul, 2005).

- **Jammu Division:** Potters maintained a strong tradition of producing open-air votive objects, ritual panels, and animal figures (such as horses and bulls) for seasonal rural festivals, keeping classical Hindu folk iconographies alive.

3. Methodology

To assess the modern socio-economic standing, technological challenges, and operational sustainability of this heritage craft, a major field survey was conducted. While qualitative assessments were gathered across the Kashmir Valley to provide context, this study presents a primary quantitative evaluation of 214 traditional artisans located across the Jammu Division.

The field survey utilized a standard questionnaire containing 62 socio-economic, operational, and technological questions. It gathered information on household demographics, literacy levels, specific manufacturing tools, monthly income brackets, and primary market avenues. The resulting data was processed through Python-based statistical packages to generate cross-tabulations and frequency counts (Zubair, 2010).

4. Socio-Economic Asymmetry: Empirical Data Analysis of the Jammu Division

The data collected from the Jammu Division reveals a fragile artisan community struggling with structural economic shifts and limited market access.

4.1 Demographic Distribution and Operational Status

The survey covered 214 respondents across six key districts of the Jammu Division, showing a clear concentration of traditional pottery households across the sub-region:

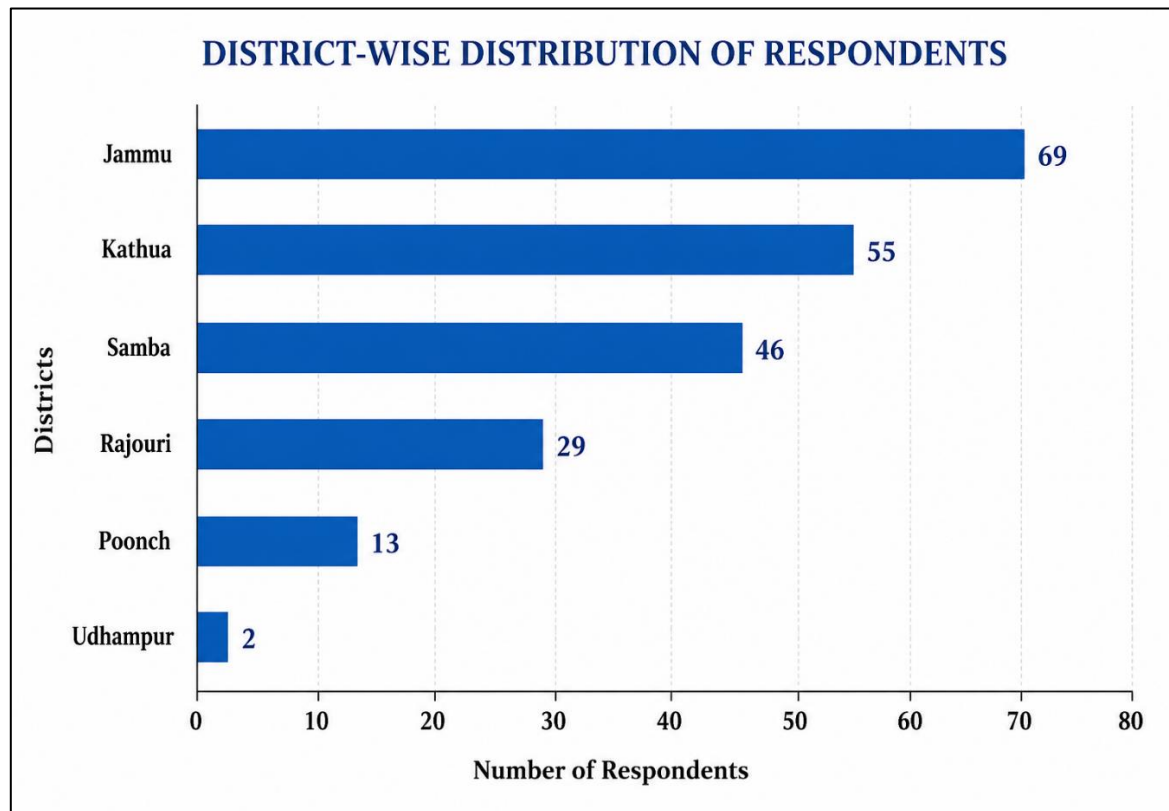


Figure 4.1. District -wise Distribution of Respondents

- **Exclusively Hereditary Lineage:** The dataset shows that 100% of surveyed artisans belong to the traditional *Kumhar/Kumbhakara* caste. The entry rate of non-traditional entrepreneurs into this craft space is 0%, reflecting a rigid occupational structure.
- **Gender Disparity:** The active workforce is heavily male-dominated. Men account for 79.91% (171 respondents) of the primary artisans, while women make up 20.09% (43 respondents). Women are primarily relegated to unpaid family labor, handling raw material preparation and clay mixing rather than wheel throwing or marketing.
- **The Aging Factor:** The average age of the artisans stands at 46.90 years, with a standard deviation of 12.16 years. The youngest active potter recorded is 20 years old, while the oldest is 85. The low number of practitioners under the age of 25 indicates a serious generational gap.

4.2 The Operational Abandonment Metric (Performing vs. Non-Performing)

A major finding of the study is the high level of operational abandonment among traditional terracotta artisans in the Jammu Division. Out of 214 surveyed artisans, 31 had completely discontinued pottery production.

Operational Abandonment Rate:

$$\text{Operational Abandonment Rate} = \frac{31}{214} \times 100 = 14.49\%$$

The 14.49% abandonment rate indicates a significant structural challenge for the survival of traditional pottery. These 31 respondents belong to hereditary pottery families but have ceased production because the occupation is no longer financially viable. Most have shifted to manual labour, construction work, or seasonal agricultural employment.

When we break down this abandonment by district, we uncover sharp geographic disparities as clearly depicted in the bar graph:

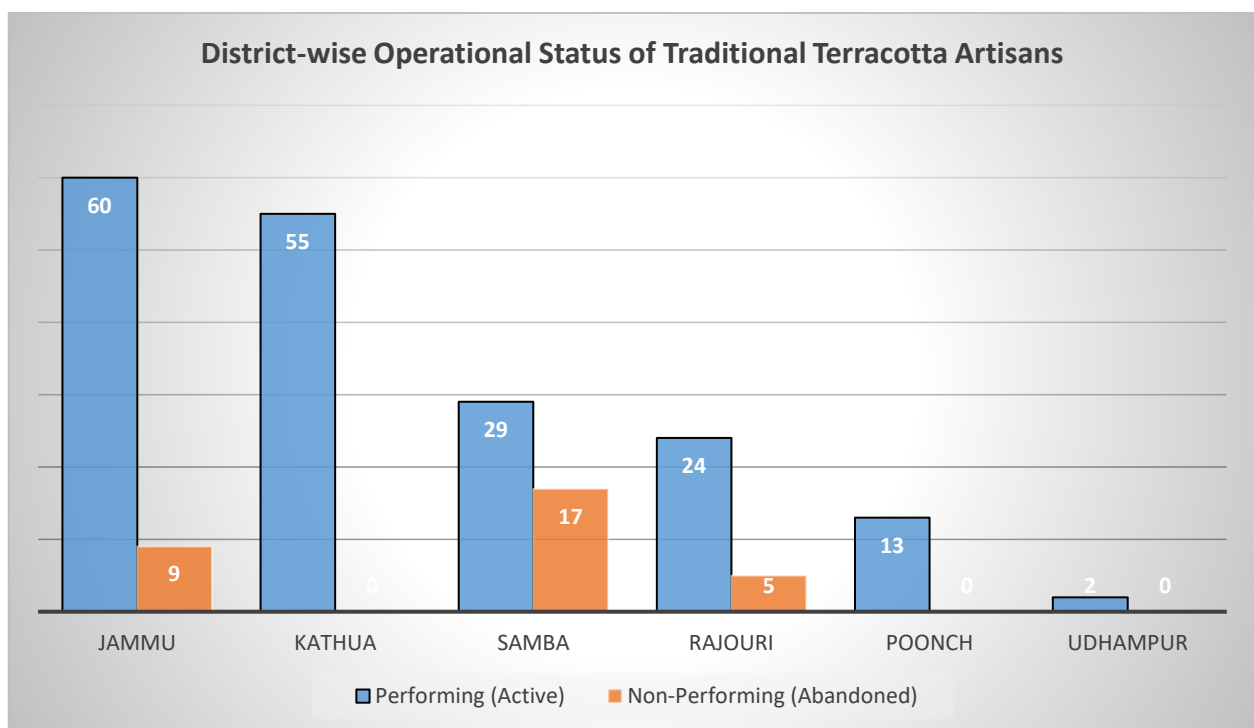


Figure 4.2. Bar chart represents the District-wise Operational Status of Traditional Terracotta Artisans

Table 4.2 District-wise Operational Status of Traditional Terracotta Artisans

District	Performing (Active)	Non-Performing (Abandoned)	Total
Jammu	60	9	69
Kathua	55	0	55
Samba	29	17	46
Rajouri	24	5	29
Poonch	13	0	13
Udhampur	2	0	2
Total	183	31	214

Interpretation

The district-level comparison reveals considerable geographical variation in occupational continuity. Samba records the highest operational abandonment, where 17 out of 46 artisans (36.95%) have discontinued pottery production. This comparatively high rate reflects the impact of industrial expansion, urbanization, declining access to traditional clay sources, and increasing dependence on wage labour. In contrast, Kathua, Poonch, and Udhampur reported no cases of operational abandonment, indicating relatively stronger continuity of traditional pottery practices.

4.3 Educational Vulnerability and Literacy Profiles

Coming towards the Educational Vulnerability and Literacy Profiles, the educational profile of traditional terracotta artisans in the Jammu Division indicates a low level of formal educational attainment. Limited educational opportunities have constrained artisans' capacity to adopt modern production techniques, digital marketing practices, financial literacy, and institutional support mechanisms. Consequently, educational disadvantage remains one of the major factors affecting the socio-economic development and sustainability of the traditional pottery sector.

Table 4.3 Represents the Educational Qualification of Respondents (N = 214)

Educational Qualification	Frequency	Percentage (%)
Illiterate	94	43.93
8th Standard	31	14.49
10th Standard	21	9.81
12th Standard	13	6.07
9th Standard	7	3.27
5th Standard	5	2.34
7th Standard	5	2.34
Higher Education*	3	1.40
4th Standard	2	0.93
6th Standard	2	0.93
Others**	31	14.49
Total	214	100.00

* **Higher Education includes:** Graduate (1), M.A. B.Ed. (1), and P.G. B.Ed. (1).

Interpretation:

The educational profile demonstrates that illiteracy remains the most dominant characteristic among traditional terracotta artisans, with 94 respondents (43.93%) having received no formal education. Among those who attended school, educational attainment was generally limited to the elementary and secondary levels. The largest proportion completed education up to the 8th standard (14.49%), followed by the 10th standard (9.81%), while only 6.07% **reached the** 12th standard.

Higher education was extremely rare, with only three respondents (1.40%) possessing university or professional qualifications. This limited educational attainment significantly constrains artisans' ability to adopt innovative production methods, access digital markets, utilize formal banking services, and benefit from entrepreneurship and government development schemes. Consequently, low educational attainment continues to reinforce the community's dependence on traditional production systems and restricts opportunities for economic diversification.

4.4 Economic Distress and the Ritual Dependency Trap

The financial metrics from the survey confirm that traditional terracotta work is no longer an economically self-sustaining primary occupation.

- **Depressed Monthly Incomes:** The mean monthly income across the active potter population is ₹9,187.43, with a lower median income of ₹8,000.00. The single most frequent monthly return is just ₹5,000.00 (29 respondents). This concentration below regional minimum wage lines forces households to rely on secondary, low-skill jobs to make ends meet. The financial metrics from the survey confirm that traditional terracotta work is no longer an economically self-sustaining primary occupation.

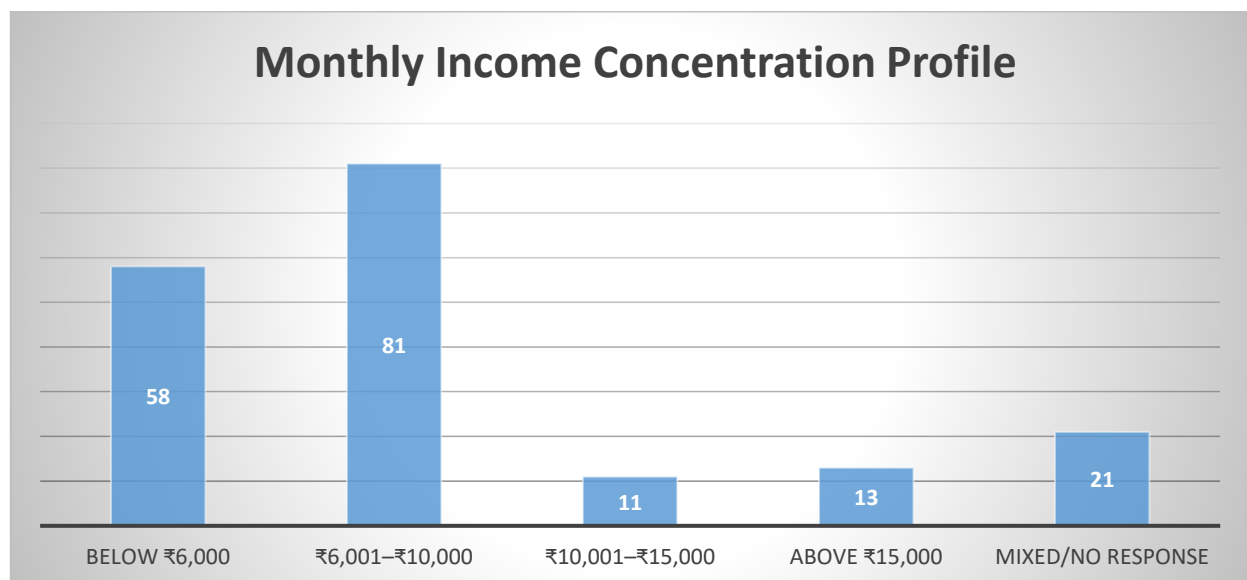


Figure 4.4. Bar chart represents Monthly Income Distribution of Terracotta Artisans (n = 184)

Interpretation:

The majority of artisans (81 respondents) earn between ₹6,001 and ₹10,000 per month, while 58 respondents earn less than ₹6,000, indicating that nearly three-fourths of the respondents fall within low-income brackets. Only 13 artisans reported monthly earnings above ₹15,000, highlighting the limited economic sustainability of traditional terracotta craftsmanship.

- **The Ritual Dependency Trap:** The production patterns of Jammu's terracotta artisans remain largely dependent on cultural and religious demand rather than a stable commercial market. As shown in table , 31.31% of artisans primarily produce for traditional demands, followed by religious rituals (28.04%), seasonal festivals (8.88%), and special occasions (5.61%). Only 26.16% reported producing for mixed civic use.

Overall, 73.84% of artisans rely on traditional, ritual, and seasonal markets, creating a ritual dependency trap. This dependence results in temporary income peaks during festivals and religious events like Diwali (for *diyas* or clay lamps) or local folk festivals, followed by long periods of low sales and financial stagnation, limiting the economic sustainability of terracotta craftsmanship.

- **Primary Motivation for Terracotta Production**

Table 4.4.1 Shows the Percentage distribution of artisans by their primary production motivation

Category	Percentage
Traditional Demands	31.31
Religious Rituals	28.04
Mixed Civic Use	26.16
Seasonal Festivals	8.88
Special Occasions	5.61

4.5 Production Typologies and Technological Infrastructure

The survey data highlights a wide technological gap, with production systems still relying on outdated equipment:

- **Product Typologies:** Production is largely split between Decorative Items (22.43%) and basic functional Earthen Pots (22.43%), followed by traditional *diyas* and ritual water containers (*Matka/Kumb*).
- **Tool Infrastructure:** 43.93% (94 out of 214) of the workshops rely entirely on a standard potter's wheel with natural clay colors, while 34.11% (73 respondents) rely on open, wood-burning kilns. The low adoption of electric wheels and modern gas kilns results in high fuel consumption, variable firing temperatures, and high product loss during rainy seasons.

5. The Cross-Regional Contrast: Jammu vs. Kashmir Valley

When we compare the Jammu division survey data with qualitative and structural indicators from the Kashmir Valley, we uncover a clear regional contrast:

Table 5.1 shows the Cross-regional Structural Contrast Matrix

Comparative Dimension	Jammu Division	Kashmir Valley
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Craft Continuity	Occupational attrition observed (14.49% artisans have abandoned the craft). Declining participation of younger artisans. Traditional pottery practice is gradually shrinking.	Near-complete continuity of traditional pottery practice. Stable artisan population across generations. Strong retention of traditional occupational identity.
Institutional Integration	Limited government registration among artisans. Low coverage of Artisan Identity Cards. Restricted access to government welfare schemes, design training, and marketing support.	High level of artisan registration. Widespread possession of Artisan Identity Cards. Better access to institutional support, welfare schemes, exhibitions, and skill-development programmes.
Production and Market Orientation	Production mainly driven by seasonal festivals, religious rituals, and traditional earthen utility items. Market demand remains irregular and seasonal.	Production centred on essential household utilities, particularly Kangri and Martaban . Relatively stable household demand throughout the year.
Generational Outlook	Younger generations increasingly shift to alternative occupations due to low income and limited economic prospects. Weak intergenerational transfer of pottery skills.	Strong family-based transmission of traditional pottery skills. Younger generations show greater willingness to continue the craft as a symbol of cultural identity and livelihood.
Economic Sustainability	Income is largely seasonal and insufficient to support full-time livelihoods. High dependence on supplementary occupations such as agriculture and wage labour.	More stable income generated through continuous demand for traditional household pottery. Pottery remains an economically viable household occupation in many artisan families.
Cultural Significance	Pottery is primarily associated with ceremonial, ritualistic, and seasonal cultural practices. Gradual decline in everyday household use of earthenware.	Pottery remains deeply embedded in everyday Kashmiri culture, particularly through the use of Kangri and Martaban . Strong cultural attachment contributes to craft preservation.

Overall Status	Traditional pottery is experiencing gradual decline due to occupational attrition, weak institutional support, seasonal demand, and reduced youth participation.	Traditional pottery demonstrates greater resilience, supported by strong cultural continuity, institutional integration, stable household demand, and sustained intergenerational transmission of skills.
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- Operational Attrition vs. Continuity:** While Jammu faces a high 14.49% craft abandonment rate, the Kashmir Valley shows near-total practitioner retention. This continuity is sustained by the steady demand for specialized winter items like the *Kangri*, which remains an essential household item across rural and urban Kashmiri homes despite the availability of modern electronic heaters.
- Institutional Integration:** Potters in the Kashmir Valley show high rates of formal registration with artisan organizations and widespread possession of official identity cards. In contrast, Jammu's rural potters operate largely outside these administrative networks, leaving them cut off from state subsidies, modern design workshops, and government craft fairs.
- Generational Outlook:** In the Jammu division, low financial returns and high illiteracy prompt younger family members to reject learning the craft. In contrast, Kashmiri artisan families report a stronger desire among the youth to keep the family craft alive, viewing it as a vital expression of regional identity.

6. Structural Risk of Extinction: A Multi-Factorial Attrition Model

To visualize how these challenges interact to threaten the craft's survival, we can map them into a multi-factorial model:

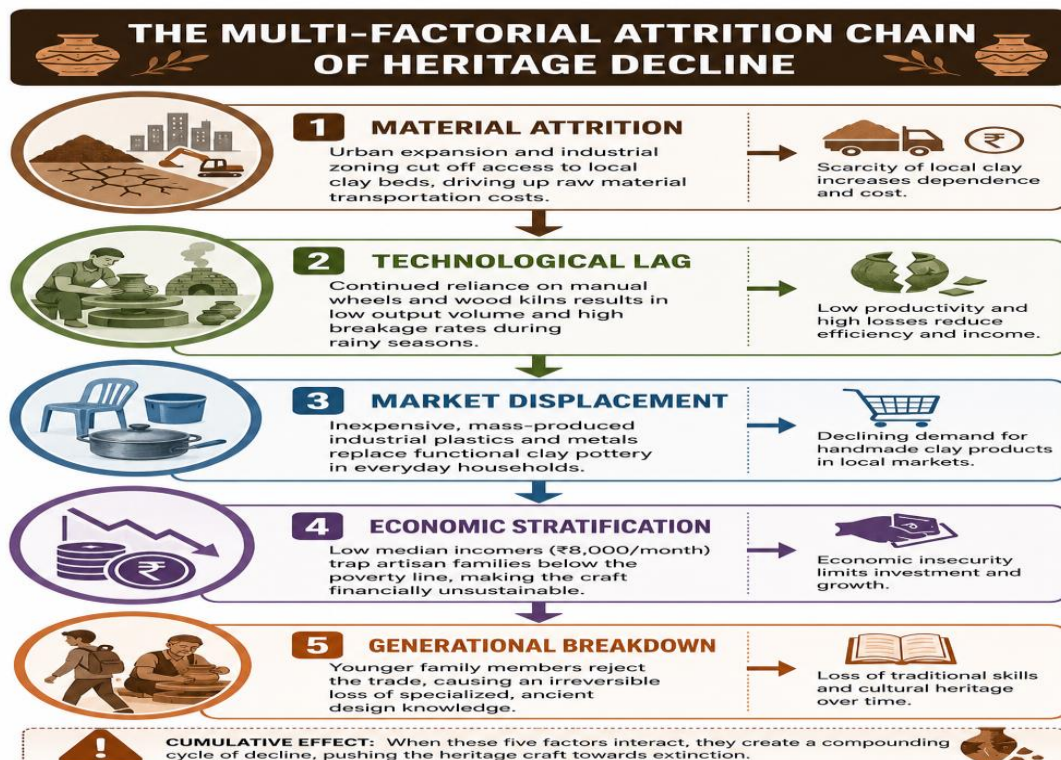


Figure 6.1. The Multi-factorial Attrition Chain of Heritage Decline

7. Strategic Roadmap: Transforming Heritage into Sustainable Creative Industries

To reverse this decline and transform J&K's terracotta traditions into self-sustaining creative operations, the region can align with national frameworks for economic self-reliance and cultural preservation. We propose a three-pillared strategy:

7.1 Technical and Institutional Interventions

- Targeted Technology Upgrades:** Establish state-funded programs to replace manual stone wheels with motorized electric wheels, and open-fire pits with energy-efficient gas kilns. This technology shift will reduce physical labor, lower fuel costs, and minimize firing errors.
- Rapid Onboarding and Registration Drives:** Run dedicated administrative registration campaigns across rural Jammu, Samba, and Rajouri to issue official Artisan Identity Cards. These cards will connect isolated potters to direct banking resources, interest-free micro-loans, and national craft networks.
- Raw Material Protection Zones:** Designate and protect historic alluvial clay beds along the Tawi and Jhelum River basins as protected heritage resource zones, ensuring artisan communities maintain free, long-term access to quality raw materials.

7.2 Design Innovation and Premium Market Positioning

- **Contemporary Product Design Collaborations:** Partner with institutions like the National Institute of Design (NID) and the Craft Development Institute (CDI) to help traditional potters expand into modern lifestyle markets. Artisans can blend historical patterns such as Harwan Buddhist motifs with functional contemporary products like architectural tiles, boutique stoneware, and high-end home decor.

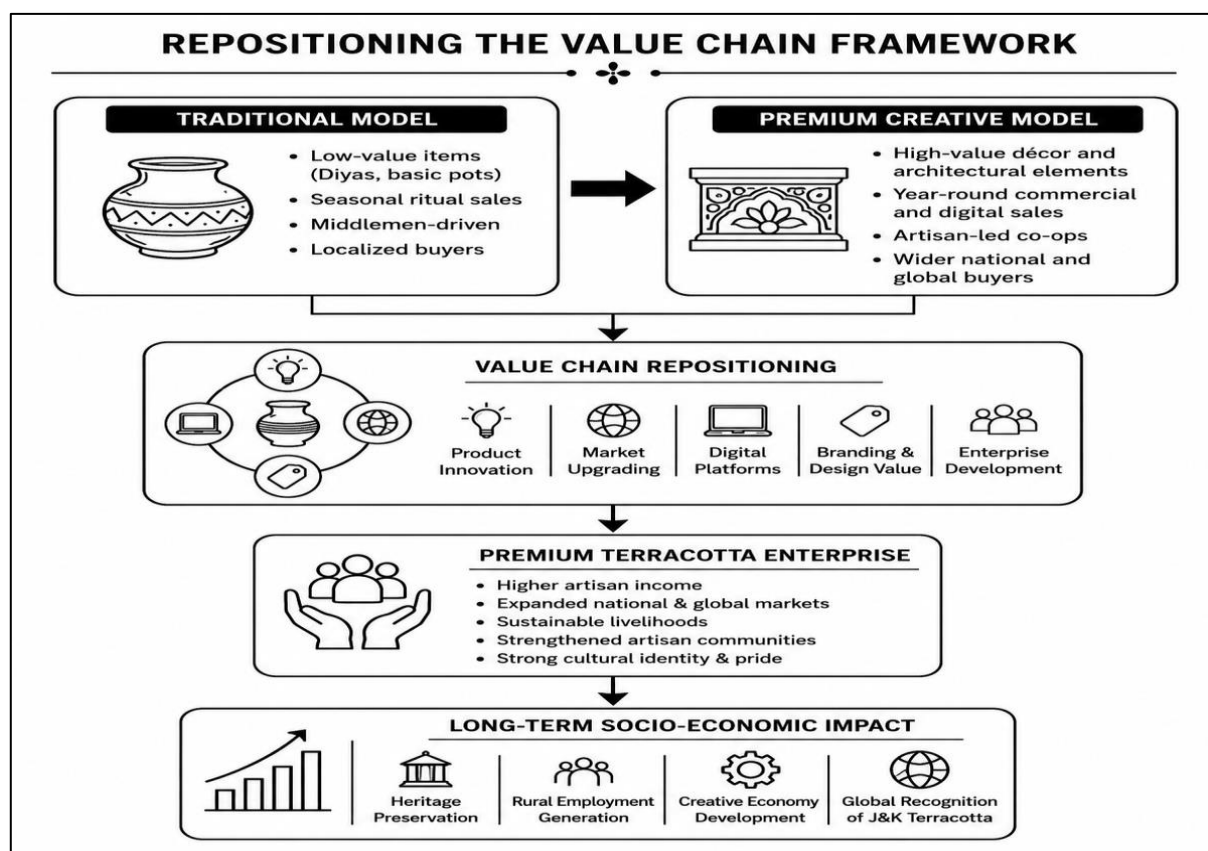


Figure: 7.2. Represents the Repositioning the value chain Framework

The framework illustrates the transformation of the Jammu and Kashmir terracotta sector from a traditional, low-value production system to a premium creative enterprise. This transition is driven through product innovation, market upgrading, branding, digital platforms, and enterprise development. In practice, these strategies also include obtaining **Geographical Indication (GI) protection** to enhance the heritage value of regional terracotta traditions and developing direct-to-consumer digital platforms that enable artisans to bypass middlemen and access national and international markets. Collectively, these interventions improve artisan income, strengthen cultural identity, preserve traditional craftsmanship, and contribute to sustainable rural economic development.

7.3 Educational Integration via the Lok Vidya Framework (NEP 2020)

To preserve specialized craft knowledge across generations, J&K can utilize the *Lok Vidya* (Indigenous Knowledge Systems) framework outlined in India's National Education Policy (NEP) 2020:

- **School Curricula Integration:** Introduce foundational clay modeling and craft history into regional primary and secondary schools across J&K, fostering cultural appreciation among youth.
- **Vocational Apprenticeship Credits:** Create formal, credited apprenticeship programs within regional technical colleges and Industrial Training Institutes (ITIs). This framework allows master artisans to teach traditional methods to new generations, preserving historical techniques while opening up fresh entrepreneurial pathways.

8. Conclusion

The terracotta traditions of Jammu and Kashmir represent a distinct cultural asset shaped by trans-Himalayan trade, artistic syncretism, and generational resilience. However, empirical field data from the Jammu Division reveals a fragile sector under severe economic strain, marked by a 14.49% operational abandonment rate, high illiteracy (43.93%), and low median incomes (₹8,000). This structural decline requires immediate policy action.

By shifting public policy from passive preservation to active creative entrepreneurship, Jammu and Kashmir can protect its rich material history. Integrating modern firing technology, building fair artisan cooperatives, securing protective regional branding, and implementing NEP-aligned educational programs can ensure the craft survives. Through these coordinated efforts, J&K's ancient clay traditions can become a driving force for sustainable economic growth and cultural pride.

9. Acknowledgement

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