Exploring the Living Craft Traditions of Andhra Pradesh: A Design Perspective on Artisanship, Material Innovation and Future Product Applications

Author:
Adarshini Ariana R
B.Design (Product Design)
UID – Unitedworld Institute of Design, Gurugram

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Abstract

This paper documents a week-long exploratory field journey undertaken from Ponmar, Chennai to nine heritage craft clusters across Andhra Pradesh. The objective was to understand traditional craft practices through the lens of a product designer and to identify how artisans' material knowledge, processes and community-based innovation can inform contemporary product design. Crafts such as Budithi metal casting, Bobbili veena making, Etikoppaka lacquerware, Eluru carpet weaving, Kondapalli wood toys, Pedana Kalamkari, Udayagiri wooden cutlery, DC Palli leather puppetry and Madhavamala woodcraft were studied in situ. Interviews with artisans revealed nuanced material intelligence, sustainable resource use and tacit design methods developed over centuries. The findings indicate that integration of such indigenous craft systems within modern product design education can foster context-sensitive innovation and socio-economic sustainability.

Keywords:
Andhra Pradesh crafts, product design, artisan innovation, design heritage, sustainable materials, craft technology, field research

1. Introduction

Craft traditions form a crucial part of India's tangible and intangible cultural heritage. Andhra Pradesh in particular is home to diverse artisanal practices rooted in local geography, natural materials and social structures. For product designers these crafts represent living laboratories of design thinking — embodying iterative processes, resource optimisation and user-centric innovation long before these terms became industrial norms [1].

The present study explores nine significant craft clusters across Andhra Pradesh visited during a seven-day field journey starting from Ponmar, Chennai. The research aims to analyse each craft from a technical and design perspective: understanding process flow, tools and machinery, material sourcing and potential adaptation to modern product development.

By connecting the aesthetic and functional intelligence embedded in these crafts with contemporary design methodologies this study demonstrates how traditional artisanship can inspire sustainable and culturally resonant innovations for the global design industry [2].

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2. Methodology

The field exploration followed an ethnographic observation model integrated with design research methods [3]. The author travelled by car from Ponmar, Chennai across Andhra Pradesh visiting nine sites sequentially:

1. Budithi – Vizianagaram District
2. Bobbili – Vizianagaram District
3. Etikoppaka – Visakhapatnam District
4. Eluru – West Godavari District
5. Kondapalli – Krishna District
6. Pedana – Krishna District
7. Udayagiri – Nellore District
8. DC Palli – Guntur District
9. Madhavamala – Tirupati District

Data collection combined visual documentation, artisan interviews, material sampling and process mapping. Each site study recorded:

- geographic context and local ecosystem
- type and origin of input materials
- hand tools and mechanised aids
- production workflow and sequence
- marketing channels and order-receiving systems

This documentation was analysed from the viewpoint of product design parameters such as material behaviour, joinery techniques, surface finishes, ergonomics and scalability potential.

3. Field Study and Craft Documentation

3.1 Budithi – Vizianagaram District (Metal Casting Craft)

Budithi is a small village in the Srikakulam–Vizianagaram belt known for its *Panchaloha* (five-metal) casting. Artisans here specialise in producing ritual and decorative objects using alloys of brass, zinc, copper, tin and lead. The craft is believed to have evolved in the late nineteenth century when temple metal work transitioned into household artefacts.

The raw materials are procured from nearby metal markets in Visakhapatnam. Artisans use locally prepared clay moulds layered with cow dung and sand for casting. The main tools include crucibles, bellows and manually rotated ladles. The process begins with alloying the metals in fixed proportions, melting at controlled temperatures and pouring into pre-heated moulds. After cooling, the objects are removed, polished and engraved with simple geometric ornamentation. Orders are mostly received through middlemen and local handicraft fairs, though online platforms are slowly emerging.

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From a product design perspective, Budithi craft demonstrates material control and thermal precision. The sand–clay mould composition is naturally heat resistant and could inspire new eco-friendly moulding materials in modern design [4].

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3.2 Bobbili – Vizianagaram District (Veena Making)

Bobbili town is synonymous with the making of *Bobbili Veenas* — string instruments carved from a single piece of *Panasa* (jackfruit) wood. Artisans belong to hereditary families, each managing a micro workshop attached to their home.

The process begins with selecting seasoned jackfruit wood for its light weight and acoustic resonance. Using saws, chisels and hand drills, artisans shape the hollow body and neck, followed by detailed carving of motifs representing local mythology. The bridge and string mechanisms are fitted manually. Orders come mainly from musicians, temple authorities and government handicraft outlets.

The Bobbili Veena embodies functional aesthetics — ergonomic proportion, sound quality and handcrafted precision. Product design students can learn about the harmony between form, function and emotional value embedded in such handcrafted musical instruments [5].

3.3 Etikoppaka – Visakhapatnam District (Lacquered Wood Toys)

Etikoppaka village near the Varaha River is known for *lacquerware* toys made with naturally dyed colours. The primary raw material is *Ankudu* wood (Wrightia tinctoria) which is soft and easily turned on hand lathes.

The process uses non-mechanised tools — wooden lathe powered by foot pedals, natural lac mixed with vegetable dyes and palm leaves for polishing. The toy forms are turned, coloured through frictional heat and finished with a glossy sheen. Artisans mostly receive bulk orders through handicraft societies and exhibitions.

From a design lens, Etikoppaka reflects sustainable material innovation: fully biodegradable inputs, zero synthetic coatings and waste minimisation. These principles can directly influence eco-centric product design [6].

3.4 Eluru – West Godavari District (Carpet Weaving)

Eluru is a historic hub for wool and cotton carpet weaving introduced during the colonial period. The looms are manually operated by skilled weavers, predominantly women.

The input materials include dyed wool and cotton yarn sourced from local cooperatives. The machinery consists of pit looms, spinning wheels and comb beaters. Designs are pre-drawn on graph paper and transferred to warp threads. Each carpet takes several days depending on complexity. Orders are usually coordinated through state emporiums and export houses.

For designers, Eluru showcases colour harmony, pattern translation and ergonomics of repetitive hand motion. Studying such systems can inform user-centred workstation design and textile-based product innovation [7].

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3.5 Kondapalli – Krishna District (Wooden Toys)

Kondapalli near Vijayawada is famous for its light-weight *Puniki* wood toys. The process begins with softwood logs seasoned for months. Using hand saws, chisels and knives, artisans carve toy figures representing rural life and mythology.

After carving, the pieces are joined with natural adhesives and coated with tamarind seed paste before painting with water-based pigments. Orders come via dealers, state craft fairs and increasingly through online craft portals.

For product designers, Kondapalli demonstrates modularity and joint mechanisms using softwood — an example of how local material properties drive construction logic and sustainability [8].

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3.6 Pedana – Krishna District (Kalamkari Printing)

Pedana is renowned for natural dye block printing, locally known as *Machilipatnam Kalamkari*. The process begins with bleaching cotton cloth, applying alum mordant and then printing motifs using hand-carved teakwood blocks.

Dyes are extracted from plants such as indigo, pomegranate rind and madder root. The fabric is washed repeatedly and sun-dried. Printing workshops employ both hand and semi-mechanised washing units. Orders are managed through design studios and government-supported craft clusters.

Pedana's system offers lessons on closed-loop dye processes and life-cycle thinking in sustainable product design — an approach increasingly adopted in circular economy models [9].

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3.7 Udayagiri – Nellore District (Wooden Cutlery)

Udayagiri is well known for its handcrafted wooden cutlery, made using locally available hardwoods such as Nardi and Devadari. Artisans cut and shape the wood blocks using basic hand tools like saws, chisels and carving knives. Each spoon, ladle or spatula is refined through careful hand-sanding to achieve smooth curves and a comfortable grip. Natural oils are applied to make the products food-safe and durable.

Orders are mainly received through traders, local fairs and small craft cooperatives. For product designers, this craft demonstrates simple functional shaping, ergonomic clarity and sustainable use of natural materials [10].

3.8 DC Palli – Guntur District (Leather Puppetry)

DC Palli is traditionally known for its leather puppetry, once a celebrated folk art integral to rural shadow theatre. Today, the craft stands on the verge of extinction, with only a few senior artisans continuing the practice. Goat and deer hides are meticulously processed, sun-dried, treated, and painted with natural pigments before being perforated with fine designs that create translucent puppets. These puppets depict mythological characters and are animated using oil lamps during performances, producing vivid shadow projections.

The art has declined due to changing entertainment forms and lack of younger practitioners. However, its design potential remains significant. The translucency of the treated leather and the intricacy of hand-punched motifs can be adapted into modern product applications such as ambient lighting panels, wall art, and translucent room dividers. Incorporating this craft within contemporary design practice could rejuvenate the artisans' livelihood while preserving the cultural identity of DC Palli's heritage [11].

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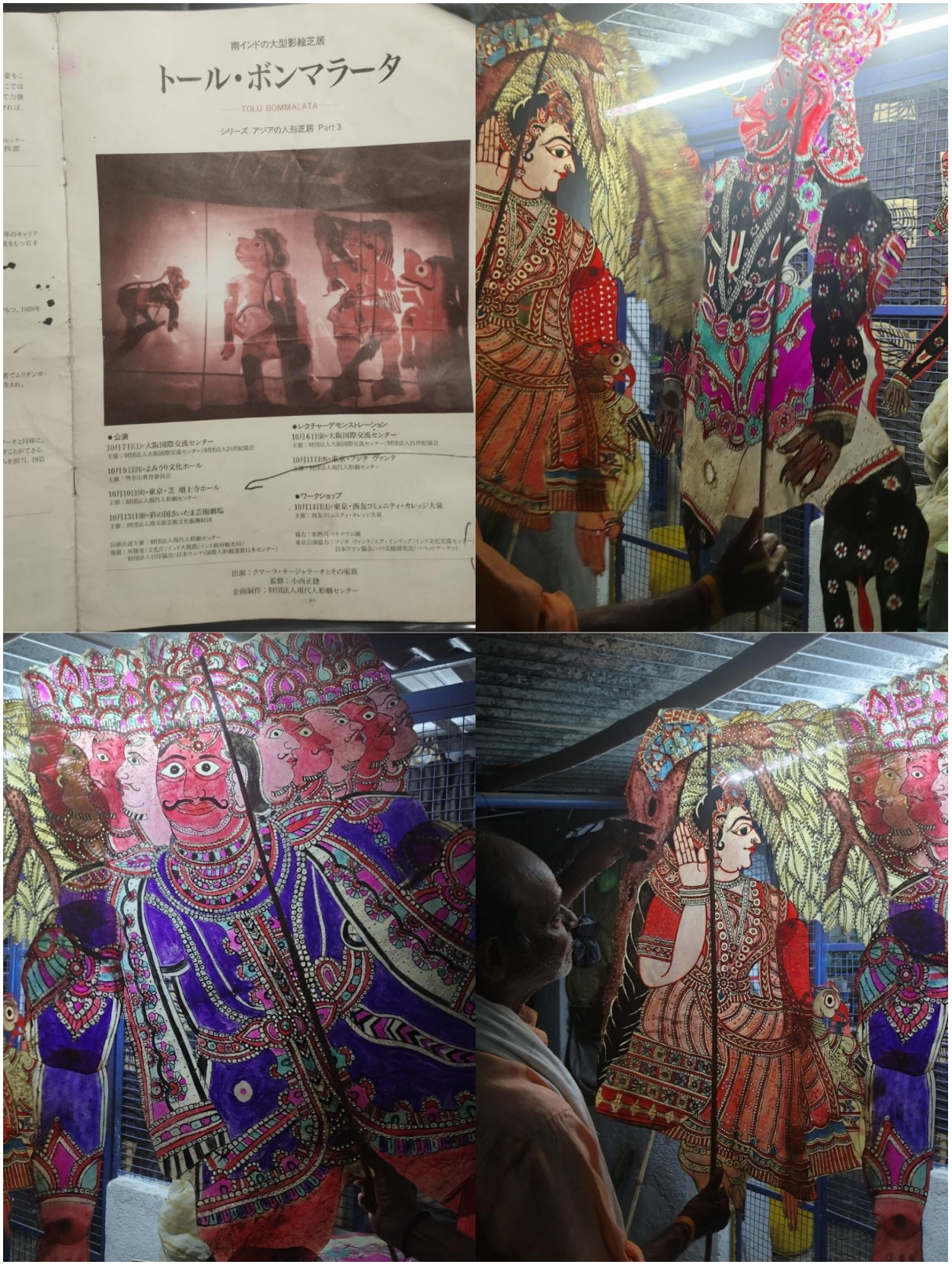

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3.9 Madhavamala – Tirupati District (Wood Carving)

Madhavamala village is known for its intricate wood carving used in temple panels and domestic décor. Artisans use teak, rosewood and sandalwood depending on availability. The main tools are chisels, mallets and engraving knives. Designs are drawn directly on the wood surface before carving.

The uniqueness lies in micro-detailing and narrative composition. Orders come from temple boards, local patrons and export intermediaries. For design education, Madhavamala offers insights into tactile form development, proportion and visual storytelling through surface relief [12].

4. Discussion: Design Insights and Future Transformation

The crafts documented across Andhra Pradesh present diverse yet interconnected lessons in design thinking, sustainability and material innovation. Each craft demonstrates a deep understanding of local ecology, resource management and user needs — key attributes of good product design.

Budithi metal casting reflects a mastery of metallurgical proportions and local sand moulding that can inform low-energy prototyping methods and recycled alloy casting in modern design.
Bobbili veena making embodies ergonomic precision and acoustic design — a model for contemporary designers exploring sound-based product experiences.
Etikoppaka lacquerware, with its friction-based natural colouring process, offers pathways for eco-friendly surface finishes and biodegradable coating materials.
Eluru carpet weaving demonstrates modular patterning and rhythmic weaving that can inspire digitally generated textile surfaces and sustainable home furnishing design.
Kondapalli wooden toys show efficient joinery and modular construction techniques relevant to educational kits, collapsible furniture and toy design.
Pedana Kalamkari printing presents a closed-loop, chemical-free dyeing system, highly relevant to today's sustainable textile and packaging industries.
Udayagiri Wooden cutlery offers lessons in ergonomic shaping and sustainable hardwood usage, which can support the development of modern kitchen tools and eco-friendly wooden utility products.
DC Palli leather puppetry, though nearly extinct, has strong potential in lighting design, translucent wall panels and interactive storytelling interfaces.
Madhavamala wood carving offers tactile mastery, depth control and aesthetic harmony that can translate into ergonomic product surfaces and architectural panel design.

Collectively, these crafts highlight a **design methodology rooted in human experience**, rather than machine dependency. For modern product designers, the role is not to replicate these crafts, but to reinterpret their essence — merging artisan skill with technology, sustainability and contemporary usability.

Such collaborations can lead to **co-design ecosystems** where artisans act as knowledge partners and designers as facilitators of innovation. This approach ensures that heritage crafts

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evolve organically into modern lifestyles without losing their authenticity. These ideas will be expanded with working prototypes and field collaboration outcomes in a forthcoming article dedicated to *craft-integrated product innovation*.

5. Conclusion

The one-week exploration from Ponmar, Chennai through Andhra Pradesh's craft clusters was both a cultural and technical revelation. Observing these crafts provided a real-world understanding of how design and craftsmanship coexist in harmony — with artisans acting as intuitive designers guided by generations of material wisdom.

Each craft, whether metal, wood, clay, leather or textile-based, offered valuable insights into design processes such as form evolution, colour composition, structure, ergonomics and sustainability. For a product designer, such exposure enhances creative sensitivity and contextual awareness — skills often difficult to gain within classroom environments.

The future of product design lies in bridging traditional crafts and contemporary innovation. Through structured collaborations, design education can integrate local craft intelligence into modern applications — be it **eco-products, lighting systems, furniture, interior accessories or educational tools**. These reinterpretations will not only strengthen the economy of craft communities but also establish India's design identity rooted in its cultural heritage.

The present documentation thus acts as a foundation for continued design research and innovation inspired by Andhra Pradesh's living craft traditions.

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