

Material Utilisation Practices in Weweldeniya Craft Community, Sri Lanka

DESHANIKA T.^{1*} and NUGAWELA C.T.²

^{1,2}Department of Integrated Design, University of Moratuwa, Sri Lanka

¹thilini.deshanika18@gmail.com, ²nugawelac@uom.lk

Abstract - The Craft industry in Sri Lanka has been an integral part of the economy for centuries, contributing to both rural livelihoods and national trade. The Weweldeniya craft community in Sri Lanka has a rich heritage of producing intricate and culturally significant craft items using traditional techniques. However, the industry faces pressing challenges primarily due to sourcing materials from various geographic locations, incurring substantial transportation costs. To address these multifaceted challenges, the craftsmen have adopted a resource optimization strategy aimed at minimising waste and maximising resource utilisation. The study seeks to illuminate the types of materials frequently utilised in the production of diverse craft products within this community and examines the integration of these materials at various stages of production, exploring the techniques and methods employed by craftsmen to transform raw materials into finished products. Furthermore, this research aims to investigate the sustainable strategies and techniques adopted by craftsmen in the Weweldeniya craft community to optimise material utilisation in their production processes. By analysing their approaches with 3R principles (Reduce, Reuse, Recycle) and lean manufacturing pull system, the study aims to highlight innovative measures implemented by craftsmen to minimise environmental impact while preserving traditional crafting methods. This research employs a mixed-methods approach while dominating qualitative approach, combining semi structured interviews, video observations, and questionnaire surveys within the Weweldeniya craft community. Through these methodologies, the research aims to provide a comprehensive understanding of the intricate material utilisation practices and sustainability initiatives embraced by craftsmen in Weweldeniya.

Keywords: Material utilisation, Weweldeniya craft community, 3R principles, Lean manufacturing pull system, Waste reduction

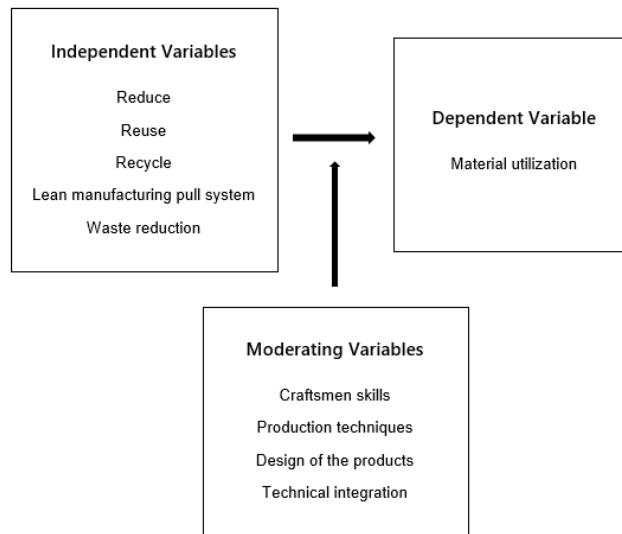


Fig.1 - The conceptual framework (Source: Author)

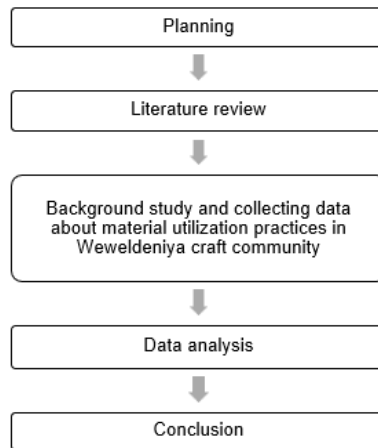


Fig.2 - The research plan and structure (Source: Author)

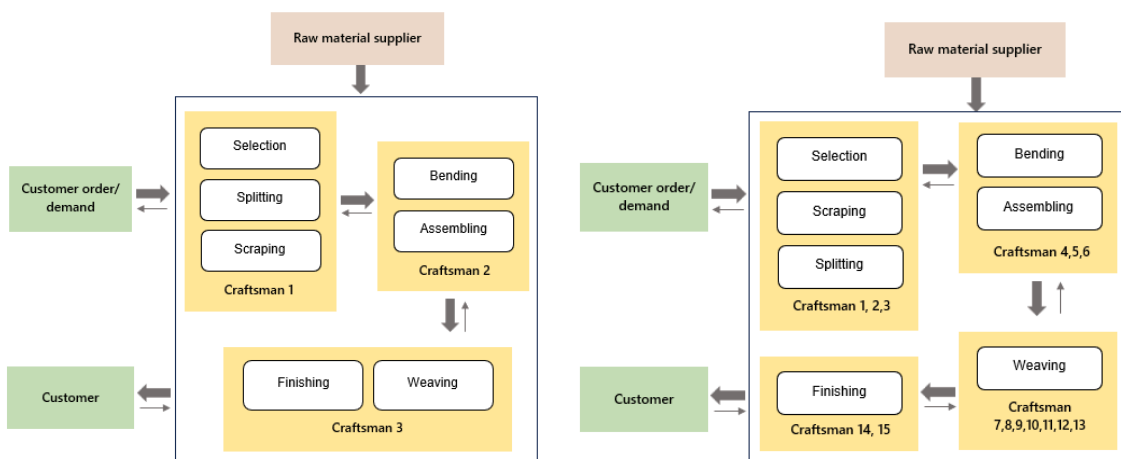


Fig.3 - Production process employed by micro-level enterprises with 3 employees and small-level enterprises with 15 employees

(Source: Author)

References

- Amarasekera, H., & Dheerasekera, W. C. (2021). Study on Cane Furniture industries at Wewaldeniya and Wood- based Furniture industries at Moratuwa. University of Sri Jayewardenepura.
<http://dr.lib.sjp.ac.lk/handle/123456789/9412?show=full>
- Ariffin, W., Husain, H., & Salleh, A. (2001). Transfer of technology model: Rattan furniture making unit. International Network for Bamboo And Rattan (INBAR).
<https://cgspace.cgiar.org/bitstream/handle/10568/64373/RattanFurniture.pdf?sequence=>
- Astari, L., Sudarmanto, Kusumah, S., Akbar, F., & Prasetyo, W. (2019). Quality of particleboard made from rattan waste. The 8th International Symposium for Sustainable Humanosphere. IOP Conference Series: Earth and Environmental Science.
<https://doi.org/doi:10.1088/1755-1315/374/1/012009>
- Bahraini, A. (2019, May 6). Waste4Change Supports 3R (Reduce-Reuse-Recycle) Green Concept! Waste4Change.
<https://waste4change.com/blog/waste4change-supports-3r-reduce-reuse-recycle-green-concept/>
- Hirschberger, P. (2011). Global rattan trade: Pressure on forest resources – analysis and challenges. WWF Austria.
http://awsassets.panda.org/downloads/final_rattan_trade_analysis_summary_english.pdf
- Kurniawan, B., Sekarningrum, D., Nugrahadi, G., & Samri, I. (2023, April 20). Utilising rattan waste of furniture industry in Desa Trangsan, Sukoharjo. AIP Conference proceedings
<https://doi.org/10.1063/5.0110236>
- Landau, P. (2023, August 8). What Is Lean Manufacturing? ProjectManager.
<https://www.projectmanager.com/blog/what-is-lean-manufacturing>
- Lenzing. (n.d.). Circular economy. Lenzing.
https://www.lenzing.com/sustainability/sustainability-management/circular-economy?gclid=Ci0KCQjwx5qoBhDyARIsAPbMagBFED0Bbl6fgkNycD10KgUxRhZVunjco_RdYk6EM4RC2AbBdal2oLXsaAmlIFAlw_wcB
- Rathnayaka, R., & Kodithuwakku, D. (2021). The current challenges in Sri Lanka's rattan manufacturing industry. II(I).
<https://doi.org/10.4038/tjata.v2i1.53>
- Sumarno, S., Tellu, T., & Cahyana, A. (2022). Split waste from rattan industry? Crafted product and furniture industry fiber bar. 6(S4), 351-366.
<https://doi.org/10.53730/ijhs.v6nS4.5520>