

## ABSTRACT

The growing mobility of modern society has increased the demand for innovative travel accessories that offer practicality, efficiency, and multifunctionality. This study seeks to meet these demands by designing a foldable travel hanger that maximizes storage space while ensuring clothing remains neat, addressing the needs of both business and leisure travelers. The design process follows Nigel Cross's Rational Product Design and Development Method, a systematic approach that involves clarifying objectives, defining functions, establishing requirements, identifying key features, generating design alternatives, and selecting the best solutions. The final solution effectively reduces the risk of wrinkled clothing during travel and speeds up the drying process, offering dual benefits. Its compact and user-friendly design ensures long-term usability, making it a sustainable and cost-effective option for modern travelers. The product contributes to enhancing users' professional image by providing reliable and efficient clothing management, thus addressing critical customer needs.

The study emphasizes the importance of incorporating user feedback to improve product usability and satisfaction. By aligning technological innovation with consumer needs, this work establishes a benchmark for future travel accessory development, demonstrating how structured design methodologies can resolve user challenges and drive innovation in consumer products. The results of this study show that the Multifunctional Foldable Hanger with a built-in heating system can help smooth out clothes easily during travel, weighing only 700g and featuring 7 folding hinges. With a portable design, heat-resistant ABS material, and 3 adjustable temperature settings, this product innovation has also been tested using von Mises stress analysis to assess its strength.

Keyword: Rational Product Design, Nigel Cross, Portable Hanger, Product Development, Professional Appearance.