IMPROVING THE IMPACT OF BIO-BASED PLASTIC MATERIALS ON BABY PRODUCTS FROM CIRCULAR ECONOMY PERSPECTIVE TOWARDS BUSINESS OPERATIONS: STUDY CASE AT PT. XYZ

THESIS

Submitted as one of the requirements to obtain

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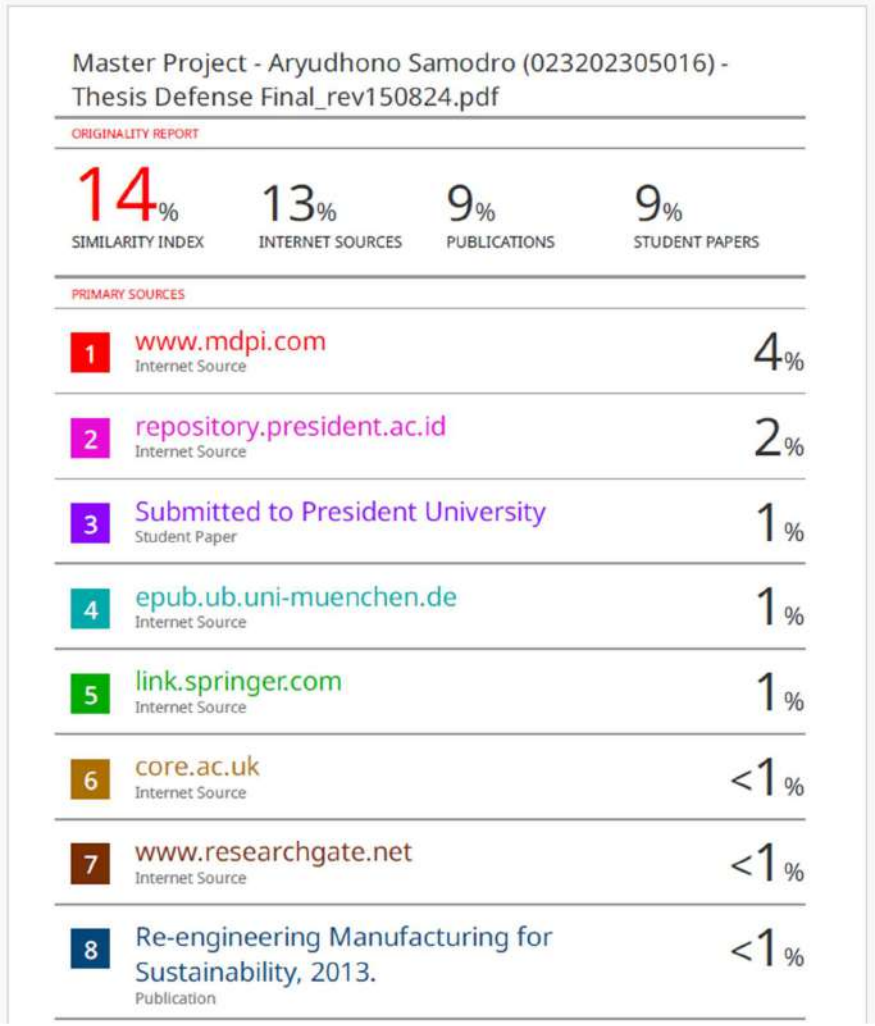

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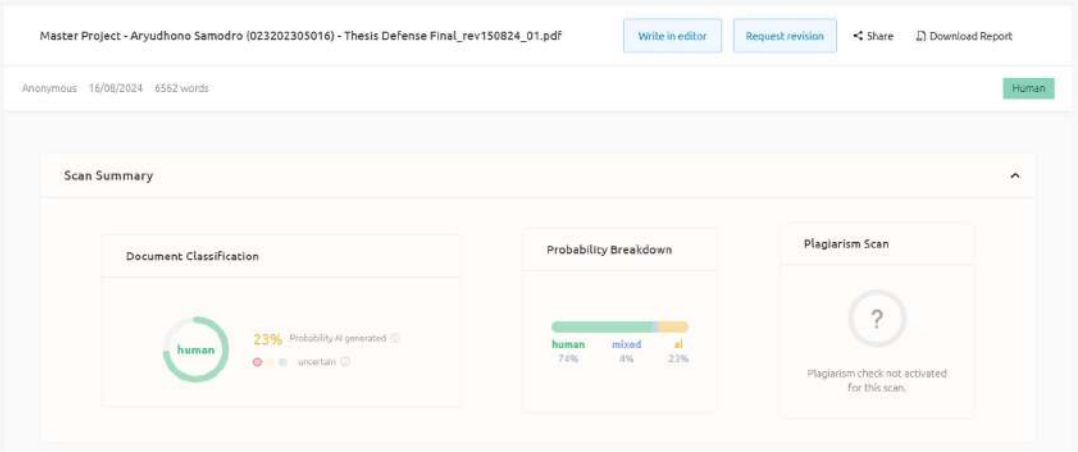

ABSTRACT

The manufacturing processes of baby products by creating a sustainable product, especially the usage of bio-based plastic material, is quite challenging. Companies must drive and strive to deliver the environmental message. In terms of the operational side, it may lead to high production costs. Sustainability is not only about environmental or eco-friendly materials, but also about the production process and ensuring its good productivity. Bio-based plastic material is one of the non-fossil materials that gain popularity these days. This kind of material is made from renewable energy that helps to reduce the waste that impacts on the environment. Despite its popularity, this material procurement is also another challenge due to its rare manufacturers or suppliers and impacts the overall procurement cost and time consuming. Externally, baby products using bio-based plastic material also affect consumer perception with regards to the product price and its quality. Customers are very sensitive to product prices due to the unstable global economic situations caused by climate change, geopolitical conditions, government policies and the after-effects of the pandemic. This case study aims to evaluate and assess the impact of using bio-based plastic material in the manufacturing processes of baby products and its subsequent effect such as: productivity, quality, cost, product sustainability and the market acceptance at PT. XYZ. The research employs a mixed-methods approach, combining qualitative analysis of manufacturing productivity metrics with market trend analysis. Preliminary findings at PT. XYZ found that the use of biobased plastic material can reduce the manufacturing productivity due to its difficulty of processing and cost-effectiveness. This research concludes with a discussion on the implications of these findings and the solutions for manufacturers, marketers, and policymakers in the baby products industry, and suggests directions for future research improvement.

Keywords: *bio-based plastic; manufacturing; circular economy; product sustainability; baby product industry.*

ABSTRAK

Proses manufaktur produk bayi dengan menciptakan produk yang berkelanjutan, terutama penggunaan bahan plastik berbasis bio, cukup menantang. Perusahaan harus berusaha untuk menyampaikan pesan lingkungan. Dari sisi operasional, ini dapat mengakibatkan biaya produksi yang tinggi. Keberlanjutan tidak hanya tentang bahan ramah lingkungan atau ekologis, tetapi juga tentang proses produksi dan memastikan produktivitas yang baik. Bahan plastik berbasis bio adalah salah satu bahan non-fosil yang populer saat ini. Jenis bahan ini dibuat dari energi terbarukan yang membantu mengurangi limbah yang berdampak pada lingkungan. Meskipun populer, pengadaan bahan ini juga merupakan tantangan lain karena produsen atau pemasoknya yang jarang dan berdampak pada biaya pengadaan secara keseluruhan dan memakan waktu. Secara eksternal, produk bayi yang menggunakan bahan plastik berbasis bio juga memengaruhi persepsi konsumen terkait harga produk dan kualitasnya. Pelanggan sangat sensitif terhadap harga produk karena situasi ekonomi global yang tidak stabil akibat perubahan iklim, kondisi geopolitik, kebijakan pemerintah, dan dampak pandemi. Studi kasus ini bertujuan untuk mengevaluasi dan menilai dampak penggunaan bahan plastik berbasis bio dalam proses manufaktur produk bayi dan efek berikutnya seperti: produktivitas, kualitas, biaya, keberlanjutan produk, dan penerimaan pasar di PT. XYZ. Penelitian ini menggunakan pendekatan metode campuran, menggabungkan analisis kualitatif terhadap metrik produktivitas manufaktur dengan analisis tren pasar. Temuan awal di PT. XYZ menunjukkan bahwa penggunaan bahan plastik berbasis bio dapat mengurangi produktivitas manufaktur karena kesulitan dalam pemrosesan dan efisiensi biaya. Penelitian ini menyimpulkan dengan membahas implikasi temuan ini dan solusi bagi produsen, pemasar, dan pembuat kebijakan di industri produk bayi, serta menyarankan arah penelitian di masa depan.

Kata kunci: *plastik berbasis bio; manufaktur; ekonomi sirkular; keberlanjutan produk; industri produk bayi.*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES