

## INTISARI

Peningkatan penggunaan citra digital dalam berbagai aspek kehidupan membuka peluang manipulasi yang berdampak serius. Penelitian ini mengeksplorasi efektivitas metode Error Level Analysis dan Noise Analysis dalam mendeteksi pemalsuan citra digital, khususnya pada teknik manipulasi gambar Image Splicing. Meningkatnya penggunaan citra digital dalam berbagai aspek kehidupan, seiring dengan kemudahan manipulasi melalui software editing canggih, memicu peningkatan kasus pemalsuan citra yang berdampak serius bagi individu, institusi, dan keamanan nasional. Penelitian ini menggunakan format gambar JPEG, yang rentan terhadap manipulasi karena teknik kompresi lossy. Empat objek foto dengan pencahayaan berbeda dianalisis menggunakan tools Forensically Beta. Kemudian dilakukan analisis menggunakan histogram Hasil penelitian menunjukkan bahwa Error Level Analysis dan Noise Analysis efektif dalam mendeteksi Image Splicing. Penelitian ini menekankan pentingnya mempertimbangkan faktor pencahayaan dan karakteristik spesifik teknik manipulasi gambar dalam mengevaluasi kedua metode tersebut. Pemahaman yang komprehensif mengenai keterbatasan dan kekuatan masing-masing metode sangat penting untuk otentikasi gambar yang akurat dan dapat diandalkan.

Kata kunci: Error Level Analysis, Noise Analysis, Pemalsuan Citra Digital, Image Splicing, Analisis.

## ABSTRACT

*The increasing use of digital images in various aspects of life opens up opportunities for manipulation that have serious implications. This research explores the effectiveness of Error Level Analysis and Noise Analysis methods in detecting digital image forgery, especially in the Image Splicing image manipulation technique. The increasing use of digital images in various aspects of life, along with the ease of manipulation through sophisticated editing software, has led to an increase in image forgery cases that have serious implications for individuals, institutions, and national security. This research utilizes the JPEG image format, which is susceptible to manipulation due to lossy compression techniques. Four photo objects with different lighting were analyzed using Forensically Beta tools. After that the result analyzed with the histogram approach. The results show that Error Level Analysis and Noise Analysis are effective in detecting Image Splicing. This research emphasizes the importance of considering lighting factors and the specific characteristics of image manipulation techniques in evaluating both methods. A comprehensive understanding of the limitations and strengths of each method is essential for accurate and reliable image authentication.*

*Keywords: Error Level Analysis, Noise Analysis, Digital Image Forgery, Image Splicing, Analysis.*