

## **ABSTRACT**

*Assessing Human Reliability in Kenandra SMEs Based on Gender Roles*  
The societal stigma suggests that working in the false eyelash industry is exclusively suitable for female workers. However, there has been little exploration of how male workers perform in this industry. This study examines the factors influencing individual success in the false eyelash industry and compares the reliability of male and female workers based on **Human Error Probability (HEP)**.

*The Prevalence of the False Eyelash Industry in Purbalingga Dominated by Female Workers.* As of January 2024, Purbalingga houses 39 false eyelash factories employing a total of 38,863 workers, with 80% being female. In contrast, at **Kenandra SMEs**, there are 100 workers, of which 80% are also female. This significant disparity highlights a gap in gender representation within the industry. This research aims to challenge the prevailing mindset and demonstrate to society and industry leaders that male workers are equally capable of excelling in the false eyelash industry. Additionally, the study seeks to identify the key factors contributing to worker reliability.

*SPAR-H, HTA, FTA.* The study utilizes **SPAR-H (Standardized Plant Analysis Risk-Human)** with **Performance Shaping Factors (PSF)** to measure the **HEP** of male and female workers. **HTA (Health Technology Assessment)** is applied to depict the production flow through diagrams, while **FTA (Fault Tree Analysis)** is employed to map worker errors at each task, particularly in the netting phase of production. These methodologies collectively address the research problems and provide comprehensive solutions.

*Key Findings.* The study reveals that female workers exhibit a higher **HEP** compared to male workers. Additionally, it identifies the factors influencing worker success in false eyelash production. These factors are explained through **PSF levels**, which indicate the reliability and likelihood of error for each worker.

*Keywords:* Human reliability assessment, Human error probability, Performance shaping factor, SPAR-H, Fault tree analysis, Gender roles.