Abstract

The high number of final-semester students' doubts about their motivation and work competency demonstrates the importance of evaluating their career readiness. A pre-survey conducted at Telkom University Surabaya revealed that 78% of students felt unsure about their internal motivation, and 83% doubted their ability to compete in the workforce. Based on this, this study aims to group students based on their level of career readiness using the K-Means algorithm and present the results in an interactive dashboard. Five main factors were analyzed: motivation, personal maturity, social maturity, work attitude, and work competency. Data were collected through a Likert-scale questionnaire and analyzed directly using the K-Means algorithm to form groups of students with similar career readiness characteristics. After the clusters were formed, dimensionality reduction was performed using Principal Component Analysis (PCA) to visualize the cluster results in a two-dimensional space. Validation of the optimal number of clusters was performed using the Elbow and Silhouette Score methods. This study resulted in three main clusters: the Ready to Work cluster, the Towards Ready to Work cluster, and the Need for Guidance cluster. Interactive visualizations through Looker Studio help us understand the characteristics of each cluster more dynamically. The results of this study support data-driven decision-making by the Career Development Center (CDC) in designing more targeted career development programs.

Keywords**:** *Career readiness, K-Means, student segmentation, PCA visualization, interactive dashboard*