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Aviation versus Aerospace: A Differential Analysis of Workforce Jobs via Text Mining

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Abstract : From pilots to engineers, the skills development within the aerospace industry is exceptionally broad. Employers often struggle with finding the right mixture of qualified skills to fill their organizational demands. This effort to find qualified talent is further complicated by the industrial delineation between two key areas: aviation and aerospace. In a broad sense, the aerospace industry overlaps with the aviation industry. In turn, the aviation industry is a smaller sector segment within the context of the broader definition of the aerospace industry. Furthermore, it could be conceptually argued that -in practice- there is little distinction between these two sectors (i.e., aviation and aerospace). However, through our unstructured text analysis of over 6,000 job listings captured, our team found a clear delineation between aviation-related jobs and aerospace-related jobs. Using techniques in natural language processing, our research identifies an integrated workforce skill pattern that clearly breaks between these two sectors. While the aviation sector has largely maintained its need for pilots, mechanics, and associated support personnel, the staffing needs of the aerospace industry are being progressively driven by integrative engineering needs. Increasingly, this is leading many aerospace-based organizations towards the acquisition of 'system level' staffing requirements. This research helps to better align higher educational institutions with the current industrial staffing complexities within the broader aerospace sector.

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