

Assessing Application Process Factors Using Research, Modeling and Linear Regression

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Extended Abstract: The 160th Special Operations Aviation Regiment (SOAR) holds a selection process to pick soldiers to go through Green Platoon (GP), a six-week assessment process. This process filters out individuals and ultimately decides who joins the aviation regiment. The 160th Regiment (GP) currently faces high attrition rates, averaging 40%, and as a result, has wasted funds of over one million dollars annually. The 160th SOAR seeks to improve their application process to screen candidates and identify unacceptable levels of acceptance more effectively.

The design of an application plays a tremendous role in the recruitment process for an organization. With the challenge of identifying the most suitable candidates from a vast pool of applicants, employers must create their application process to determine the most important and predictive information about a candidate. Selecting the wrong candidates can result in significant consequences for an employer, which can include wasted resources, decreased productivity, and financial losses. An application process is important when it comes to correctly evaluating and assessing candidates for an organization. Selecting personnel who are unqualified or simply unable to pass an organization's standards can have adverse impacts for an organization. Many forms of application processes exist, employers across different industries collect a wide range of factors, data, and test results. This study works to optimize the application process through an analysis of application factors with the greatest predictive ability. Through an extensive literature review we identified key application factors such as biodata, prior experience, intelligence tests, psychological assessments, education, job knowledge, and health records serve as pivotal indicators informing the assessment process. While each factor contributes significantly to candidate evaluation, our analysis shows that biodata, prior experience, and intelligence tests exhibit the most substantial relevance across multiple studies. The selection methodologies highlighted in these studies employ a blend of quantitative and qualitative measures, aiming to discern the positive correlation between these factors and the overall success of candidates within an organization.

This study creates a novel application design and candidate selection methodology utilizing statistical analyses, highlighting the importance of a GRIT test in military assessments. The methodology is applied to a case study with the U.S. Army's 160th Special Operations Aviation Regiment (SOAR). Statistical analysis in this study includes logistic regression, which was utilized with historical candidate data to assess the likelihood of success and most significant factors in candidate attrition. Also, we created a linear regression model for the survey data we collected and split by MOS. This computed the R-Squared value, adjusted R-Squared value, and the p-value for each set of variables. In addition, we constructed a 50 question GRIT test that evaluated a candidate's grit level during GP to determine if any specific factors correlated to passing the course.

Keywords: Application Processes, Factors, Military, Employment, Linear Regression, GRIT test, Green Platoon