How Does Personality Affect Motivation and Performance in a Competition?

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Introduction

The NFL and the NBA have yearly drafts in which teams assess the physical abilities of potential players that they would add to their respective rosters. However, the psychological measurements are clouded and often depend on the General Manager or interviewer's personal opinion which leads to inconsistent identification of talent while spending millions of dollars attempting to develop lesser players.

I wanted to find what personality traits lead to better performance to better identify the top talent in sports, politics, academia, and any other industry with strong competition. I predicted that higher competitiveness, Self-Efficacy, and Motivation could predict performance. I also expected to see positive correlations between competitiveness, self-efficacy, motivation, and performance.

Methods

- 6 students and 1 faculty at IUPUC participated in this study. Each participant received a small gift for participation

- Each participant took two surveys:

  - Competitiveness Index, 20 items, 5 point Likert scale (Smither & Houston, 1992)

  - New General Self-Efficacy Scale, 8 items, 5 point Likert scale (Chen, Gully, & Eden, 2001)

- Participants were placed into a fake competition within the racing video game F1 2017 using a simulation steering wheel and high end computer

- Each participant recorded 3 laps. They were then told their randomly selected position relative to their fake competition

- Participants were given a chance to improve their time over an optional 5 overtime laps. The number of laps they chose was my measure of motivation, and their fastest time during that period was my measure of performance

- They then repeated those steps for 2 additional tracks for a total of 3 rounds. The tracks being Red Bull Ring (Spielberg, Austria), Melbourne Grand Prix Circuit at Albert Park Lake (Melbourne, Australia), and Autodromo Nazionale Monza (Monza, Italy)

Results

- The correlation between Competitiveness and Performance: r= -.451, ns

- The correlation between Self-Efficacy and Performance: r= .597, ns

- Motivation and Performance: r= -.338, ns

- The correlation between Regulation performance and Overtime performance: r= .943, p=.001

- The correlation between Motivation and Regulation performance: r= -.567, ns

- I performed a multiple regression predicting performance from Competitiveness, b= -10.942, ns, Self-Efficacy, b= 9.771, ns, and Motivation= .683, ns, R^2=.674

Conclusions

With so few participants, there was no realistic expectation for statistical relevance. Even if the analysis showed statistical significance, the low N meant it was an unreliable analysis. However, the regression analysis showing an R^2=.674 illustrates that competitiveness, self-efficacy, and motivation explained 67.4% of the variance in performance during the overtime period. Which supported my overall hypothesis that those three factors predicted performance.

The largest restraint was obviously participation, but another aspect that arose was the relationship between regulation lap times and Overtime performance. The strong relationship shows that participants who quickly adapted and placed the quickest regulation laps struggled to improve those times in the overtime period. The negative correlation between regulation performance and motivation also shows that the better adapters displayed higher motivation as well. This demonstrates a flaw in the design of the project related to the game I chose to place participants in. The flaw explains the low effect and negative relationship between motivation and performance.

To address the issues within this research, future projects would need a higher participation as well as using a different game or competition that recruited participants have a similar skill level in. Recruiting participants who already have a baseline level of ability or a moderate level of participation would also create better options for measuring personal motivation such as solo practice time.

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