Does Predict Personality Introversion-Extraversion Dimension the Archer’s Performance?

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Abstract: Problem stated that does predict personality introversion- extraversion variable the archer’s performance? Research type for this study was predicting and correlation method. Statistical population of this study was the Iranian expert archers that were invited or members of National Team and has at last one years experience in elite sport in age between 20-40 years old. Finally from statistical population, 34 archers based on Krejcie and Morgan table were randomly selected. In this study, the Personality introversion-extraversion dimension evaluate by using Eysenck personality inventory. Reliability coefficient reported via Baraheni et al. 0.69 for introversion- extraversion variable and 0.77 for neuroticism. In this study Reliability coefficient obtained 0.64 for introversion-extraversion. Subjects execute 36 times archery performance based on the archery competition rules and scores were calculated according to the International Federation of Archery [FITA].

All the above steps have been taken between the hours of 9 to 12 am. Before using statistical methods, parametric statistical tests of these assumptions are reviewed. In this study, the Pearson correlation coefficient and stepwise multiple regression was used ($\alpha<0.01$). Introversion-extraversion can explain 0.95 of performance changes and meaningfully predict the performance ability. Based on table 3 information, the prediction formula prepared such: [Performance= 0.95 * introversion-extraversion]. Totally results indicated that personality introversion-extraversion variable have the ability to predict the performance of skilled archers. Thus suggests that athletic trainers [and coaches] and those involved in the selection, training, exercises and games should be given the necessary attention to personality introversion-extraversion variable.

Key words: Introversion-extraversion • Personality • Sport performance • Archers

INTRODUCTION

Psychological factors as one of the main reasons for failure and success in sport is a long timethat considered. The importance of this matter may be completely cleared that athletes with a high physical and technical capabilities in their sports discipline, are not able to provide good performance. In this area arousal is most effective on these agents and is known as the physiological activation of the continuum from deep sleep to extreme excitement [1].

In this area there are various theories, drive theory, inverted U, individual zone of optimal functioning, catastrophe theory and reversal theory. The psychologists believed that Personality influencing the performance of individuals and is a factor that can be predict individual behavior based it. Cattel defined personality as a factor that can predict behavior in certain circumstances. Lazarus and Monat (1979) also define a character: Character is relatively stable Psychological structures and processes that organized the human experience and human forms actions and reactions towards the environment (Gill, 2000).

Eysenck has considered personality extraversion/Introversion dimensions on the basis of arousal. He consider the role of Ascending Reticular Activating System (ARAS) important on Introversion and extraversion and believed that Extroverts intelligent in compare to the introverts for less irritability and les arousal level is lower (Ross, 1382) [2, 3].
Therefore in current research, personality dimensions extraversion / Introversion have been studied. The difference in performance with regard to personality traits in many studies has been approved. Taub and colleagues (1978) revealed different effect of personality dimensions extraversion and Introversion in performance even for different time of day [4, 5].

Also Humphreys and Revelle (1984) were presented model of personality dimensions associated with Introversion/ extraversion, achievement motivation, anxiety, efficiency and cognitive performance. This model shows that what dimensions of personality in combination with situational factors such as success, failure, time pressure, incentives and .......... affects the motivation and incentive structures and effort. Howard and Mckillen (1990) were investigated the relationship between extraversion and cognitive performance in perceptual maze tests in the group of highly introverts and extroverts. Extraversion was associated with faster, less accurate and less reflective performance, particularly in the 'without information' condition. Extraverts used a 'high dot density' strategy to solve the mazes, whereas introverts used an 'item-by-item' strategy. Also in Kerr and Cox (1991) study the succeed athletes in compare to other groups was high in extraversion and low in neuroticism. In this regard they found significant differences between extroverted and in neurotic people in their playing ability and their study also express the impact and relationship of arousal, performance and personality type [6, 7].

Perlini and Thompson (1998) Research also shows that Extroverts and introverts differ in their reaction to performance feedback. Schmidt and colleagues (2004) reported difference in performance between the two groups was observed in mean reaction time. Research results, Introverts and extroverts hypothesis significant difference in performance in vigilance activities confirmed. On the other hand, Zinbarg and Revelle (1989) were evaluated individual differences with regard to the type of personality, anxiety and subject’s performance [8].

The results show that individual differences are strongly associated with impulsivity and anxiety and not with introversion-extraversion variable that these findings are in contradiction with the hypothesis that Eysenck (1993) reported. Personality introversion-extraversion dimension has also been studied in Mathews and Amelang research. Them in his researches showed that introverts in the low alpha wave and extroverts in the high alpha wave have better performance and concluded that the relationship between personality, performance and its arousal - that previously stated in arousal theory - has a low quantity [9-11].

As the above information implies, all listed personality affecting te performance. The important thing is that personality introversion-extraversion dimension can predict athlete’s performance?

The answers to these questions can be guide for instructors [coaches] for selection of athletes for desired sports fields. Also they can regulate participation and prediction for causing proper performance in sport fields. The main research question is: Does the personality introversion-extraversion variable can explain and predict the performance of skilled archers?

MATERIAL AND METHODS

Research type for this study was predicting and correlation method. Statistical population of this study was the Iranian expert archers that were invited or members of National Team and has at last one years experience in elite sport in age between 20-40 years old. Finally from statistical population, 34 archers based on Krejcie and Morgan table were randomly selected.

Measurement Tools: In this study, the Personality introversion-extraversion variable assessed by using Eysenck’s personality inventory. Reliability coefficient reported via Baraheni et al. 0.69 for introversion-extraversion variable and 0.77 for neuroticism. In this study Reliability coefficient obtained 0.64 for introversion-extraversion.

Implementation and Data Collection: All participants were healthy and none of them 24 hours before the test, had not used any medication. All had normal sleep and don’t consume the Coffee in the morning. Subjects execute 36 times archery performance based on the archery competition rules and scores were calculated according to the International Federation of Archery [FITA]. All the above steps have been taken between the hours of 9 to 12 am.

Statistical Analysis: Before using statistical methods, parametric statistical tests of these assumptions are reviewed. In this study, the Pearson correlation coefficient and stepwise multiple regression was used (α ≤0.01).
Table 1: Study variables (M±SD)

<table>
<thead>
<tr>
<th>Variables</th>
<th>M±SD</th>
<th>Mean deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27.59±1.12</td>
<td>6.52</td>
</tr>
<tr>
<td>Sport experience</td>
<td>3.06±0.31</td>
<td>1.75</td>
</tr>
<tr>
<td>introversion- extraversion</td>
<td>9.41±0.50</td>
<td>2.89</td>
</tr>
<tr>
<td>performance</td>
<td>294.71±5.53</td>
<td>32.27</td>
</tr>
</tbody>
</table>

Table 2: Correlation coefficient between introversion- extraversion variables and performance (P<0.01)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>R</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introversion- extraversion</td>
<td>34</td>
<td>0.953</td>
<td>≤0.001</td>
</tr>
</tbody>
</table>

Table 3: Prediction of archer’s performance based on introversion- extraversion in simple method

<table>
<thead>
<tr>
<th>Variables</th>
<th>Dependent variable</th>
<th>R</th>
<th>R²</th>
<th>A.R²</th>
<th>Df</th>
<th>F</th>
<th>P</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>introversion- extraversion</td>
<td>performance</td>
<td>0.935</td>
<td>0.909</td>
<td>0.906</td>
<td>1.33</td>
<td>330.199</td>
<td>0.001</td>
<td>0.953</td>
</tr>
</tbody>
</table>

RESULTS

Description of study variables (M±SD) shown in Table 1.

Table 2 shown the correlation coefficient between studied variables and archer’s performance and Table 3 shown the statistical prediction of the archer’s performance at the bases on introversion-extraversion dimension.

Results of Table 2 showed that between introversion- extraversion and archer’s performance.

Based on Table 3 results showed that, introversion- extraversion can explain 0.95 of performance changes and meaningfully predict the performance. Based on Table 3 information, the prediction formula prepared such:

\[
\text{Performance} = 0.95 \times (\text{introversion- extraversion})
\]

DISCUSSION


In this study introversion-extraversion personality dimension were analyzed and results indicates that introversion- extraversion personality dimension can explain performance changes and can significantly predicted the archer’s performance.

Taub and coworkers (1978), Howard and Mckilen (1990) and Schmidt et al. (2004) reports performance differences in introverts and extroverts. These studies confirm the effect of introversion- extraversion on person’s performance and were consistent with this study results. Also Kerr and Cox (1991) found that succeed athletes was higher in extroverted and lower in neuroticism than other athletes and there are significant differences between extroverts and neuroticism in performance ability and their study establish the relationship between arousal, performance and personality type.

The study of Matthews and Amelang (1993) showed the differences between introverts and extroverts performance in different situation of wave and were consistent with results of this study on stating the effect of introverts and extroverts different personality characteristics on performance. Revelle (1989) stated that differences in performance are related to anxiety and being impulsive and these results don’t relate to Zinbarg reported results.

Eysenck believed that introversion-extraversion is on central nervous system (CNS) characteristics and reported that human biological inheritance base is effective agent [2]. He reported the role of Ascending Reticular Activating System (ARAS) is important for introversion-extraversion and believed that extroverts talent in compare to introverts for less excitability and their motivation is lower [1]. therefore arousal effect on performance in sport activities previously proved, it seems logically that introversion-extraversion personality dimension effect on arousal level can be explain and predict the athletes performance (especially archer’s) [11].

Totally results indicated that personality introversion-extraversion dimension can predict the performance of skilled archers. Thus suggests that athletic trainers [and coaches] and those involved in the selection, training, exercises and games should be given the necessary attention to personality introversion-extraversion variable.
REFERENCES