

## **Using the ‘Big-Five’-For Assessing Personality Traits of the Champions: An Insinuation for the Sports Industry**

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### **Abstract**

Sport, is no more a spare time activity and has become a highly competitive and an extremely commercialized enterprise. Involvement of multinational corporations in sport activities and holding of mega events like the Olympics; and, the World Cup held by the Federation International de Football Association (FIFA); along with, the increasing impact of media broadcasting, have given rise to a new global multi- billion dollars sport market; where athletes remain the center of attention. Sport organizations, thus are always in search of the best athletes, not only for competitive purposes, but also, because the successes of a particular sport industry and corporate benefactors, depend upon the rise and fall of its super stars. The sports organization, thus are constantly on the search for high performers, such as the ‘right’ coach, the best manager, top CEOs or a new key athlete who can make their business a success. ‘Who will be the next Muhammad Ali, Tiger Woods or Venus Williams?’ is a billion dollar question. However, predicting success in sports can be quite a daunting task; and, organizations endeavor to achieve best performances from their athletes; through not only lucrative financial packages, but also through best possible sports’ relevant environment and extensive trainings. Despite all efforts, only some of the players are able to make it to the top. Understanding personality of these players is one area which has been ignored and this one area might be able to answer the billion dollar question. The present study explores this particular area and provides empirical evidence of personality traits peculiar to the high performers or more aptly, the eventual champions. Studying the impact of Big Five personality traits, on the performance of 91 contact sports national champions of Pakistan; our findings reveal significant association between performance and the Big Five traits, i.e., agreeableness, conscientiousness, emotional stability, extroversion and openness to experience.

**Keywords:** personality, big-five, contact sports, performance.

## 1. Introduction

Sport, is no more a game or merely a leisure activity in its conventional sense; rather, it has developed into an organized commercial activity. This enterprise was professionalized and commercialized since the middle of the last century (Jovanovic, 2011); and now has gained the status of a full-fledged independent industry. Sports activities are not only undertaken at an individual level, but also, at the organizational, national and global levels. This globalization of sports has led to the formation of international sport markets, where sports teams and organizations collaborate with corporate sponsors creating opportunities not only for the athletes, but also for the businesses and organizations (Goldman & Johns, 2009). According to estimates, global sports' industry is worth \$480-\$620 billion (Zygband et al., 2011).

Today, although, huge complex organizations are involved in organizing, sponsoring and marketing mega sport events like the FIFA World Cup and the Olympic etc., however, the athletes still are the center of attraction; particularly, the ones that make it to the top. These top ranking athletes attract both the consumers and the markets; mainly because the marketers use them as their brand endorsers to entice fans (Braunstein & Ross, 2010). Studies have shown an increase in consumer retail spending, when they feel an emotional attachment with well-recognized and attractive athletes and purchase their endorsed products (Carlson & Donovan, 2013).

The star system in sports industry is on the rise and riches of a particular sport industry and corporate sponsors depend on the rise and fall of its super stars; and these corporate giants can lose billions with the fall of the sports icons (Sun & Wu, 2012). Sport markets yearn for top performers, their thrilling moves, suspense in competitions and their predicted or non-predicted outcomes. Thus the sports organization, are constantly on the search for high performers, such as: the 'right' coach, the best manager, top CEOs or a new key athlete who can bring them success and a competitive edge in the sports markets (Taylor, Doherty & McGraw, 2008; Jovanovic, 2011).

Sports organizations make every effort to provide a dynamic environment and maximum facilities for the maintenance of their athletes; but, despite all the efforts, only few manage to reach the top. So far, the sport industry has mainly been focusing on athletes' training, and discipline; providing them with lucrative packages and health care, or incentives like repute and fame etc.; but not until the recent past, was it realized that '*Champions aren't made in the gyms...they are made from something they have deep inside them*' (Mohammad Ali, the boxing legend; cited in Khan & Ahmed, 2014); and it was in 1960s that the research focusing on relationship between sport and personality, took its initial steps. Various studies have tried to explain athletes' cognitive, psychological, physiological and sociological aspects, in order to predict athletic behaviors in sport.

The assumption that an athlete has a specific 'personality' has been explored, but with differing results (Shaw et al., 2009). In fact, the popular belief is that there is no such notion of a specific athletic personality. However, there are a number of studies wherein, psychologists have been proposing the existence of the phenomenon known as an 'athletic personality'; and, have tried to identify personality characteristics that distinguish athletes from non-athletes; or those that distinguish athletes in one sport from another. Using various personality inventories, like the Sixteen Personality Factor Questionnaire (16PF), athletes have been found to be more physically active than non-

athletes, whereas athletes involved in individual sports have found to be more autonomous and more independent than athletes in team sports (Hoffman et al., 2013). On one hand, sports have been found to develop personalities and help in character building, whereas, on the other, negative influences such as aggressiveness, over competitiveness and selfishness have also been noticed in athletes. A few studies have shown higher degrees of conscientiousness, extraversion and openness in individual sportsmen than team sportsmen. Many psychologists have also explored techniques such as meditation and mental imaging to control anxiety and improve concentration (O'Mahony, & Meenaghan, 1977).

Athletes' personalities have also been assessed in the context of gender, cultures, desire to win and fear of losing (Rhea & Martin, 2010; Sohrabi et al., 2011; Ahmadi et al., 2011). Research has shown that athletes gained higher score at agreeableness, conscientiousness and extraversion, and lower score at neuroticism than non-athletes (Talyabee et al., 2013). Differences in levels of ambition and confidence have also been spotted in athletes involved in contact sports (where participants come into bodily contact with one another, such as karate, boxing, wrestling, taekwondo etc.), and non-contact sports (Sohrabi et al., 2011). Athletes involved in contact sports are found to be more ambitious, more confident and energetic (Ahmadi et al., 2011). Using Five Factor Inventory (Costa & McCrae, 2008), a recent study indicated conscientiousness as a sole predictor of and having positive significant correlation with sport performance (Mirzaei et al., 2013). There also are various well known theories of personality that may be applied to explore an athlete's personality, such as; the trait approach (Javis, 1999), the situational approach (Bandura, 1999) and the interactional approach (Weinberg & Gould, 2011); which categorize individuals according to their traits.

Also, various tests are available to measure and identify specific personalities and recently psychology is making contribution as a behavioral science for improving sports performance (Tomar & Singh, 2012).

Who will be the next Muhammad Ali or Venus Williams is a billion dollar question, of global interest. However, predicting success in sports can be quite a daunting task as every top athlete has a specific physical, psychological and sociological make-up, depending upon the type of sport, the age factor, the training received the genetic combination and the innate talent. What separates 'the good from the great' or what makes a champion is not only dependent upon good genetics, innate talent and physical strength but it also depends on mental powers and certain personality traits such as their killer instincts and their sharpened skills to anticipate opponents' moves, passion, emotional stability, mental toughness, positive attitude, focus and competitive nature among others (Twist & Hutton, 2007). This study aims at identifying an athlete's personality and its specific traits that may be having a significant impact on his/her performance.

The foundations of current study are grounded in theory supporting the interactional approach, which combines inherent traits and the specific situation that an individual is in; to define a personality (Weinberg & Gould, 2011). Using the interactional approach and the Big- Five Ten Item Personality Inventory (TIPI), this study will try to find personality traits peculiar to athletes of various contact sports (i.e. karate, judo, taekwondo, boxing and wrestling), in the context of Pakistan. This study may be characterized as the first of its kind on two main grounds: firstly, no study has ever been

done on champions, that empirically tests or identifies their peculiar traits in specific; and secondly, this is also the first study in Pakistan, which empirically tests the existence of specific personality traits in athletes and champions of contact sports.

## **2. Literature Review and Hypotheses Development**

Personality has been defined as: the dynamic organization of psychophysical systems within the individual that determines his/her unique adjustments to his environment (Allport & Odbert, 1936; Robbins et al., 2010). “The total sum of ways in which individual reacts to and interacts with others (Robbins et al., 2010).” Recently, more attention is being diverted to assessing athletes’ personality with reference to their performance, physical strength and mood states. There are various studies in sports that are exploring personalities for the purpose of understanding athletes for team based events (Sindik, 2011) such as studies on segregation of individuals who participate in risky sports events (Tok, 2011) and personality differences of participant athletes in individual events and team events (Nia & Besharat, 2010). Another study tests the relationship between hope and performance of Elite Athletes optimism skills (Schinke & Peterson, 2002).

There are various well known theories of personality that may be applied to explore an athlete’s personality, such as; the trait approach (Javis, 1999), the situational approach (Bandura, 1999) and the interactional approach (Weinberg & Gould, 2011). The trait approach categorizes individuals according to their personalities and supports the idea that an individual will always react in a certain way according to his/her specific personality trait irrespective of the situation he/she is in (Javis, 1999). For instance, an aggressive person will be aggressive under any circumstances. The situational approach totally opposes the trait theory and suggests that a personality cannot be categorized and it only manifests itself under specific situations. For example, a person will behave differently and may appear docile or tranquil when he or she is with family or friends; but may be an aggressive or a belligerent individual in a competitive situation, a total opposite. However, the third interactional approach combines traits and situations to define a personality (Bowen, 2013).

Furthermore, psychological and scientific study of personality includes concepts like personality changes, personality development, personality genetics, personality pathology, vicious cycles of maladaptive behavior, personality styles etc. Theories and models of personality have been developed to identify e.g. criminal behaviors in the field of criminology; and, personality disorders in the field of medicine, psychology and organizational behaviors; work behaviors, leadership traits etc. in areas of business administration/management. Various tests like Rorschach Inkblot Test, (Eysenck’s Personality Inventory(EPI); Profile of Mood States (POMS); Minnesota Multiphasic Personality Inventory (MMPI-2)and Thematic Apperception Test (TAT) are available to measure and identify specific personalities. However, it is only recently that psychology is making contribution as a behavioral science for improving sports performance (Tomar & Singh, 2012).

Performance of individual is the key for organizational success (Betts, 2012) and sports business also relies on it for long term growth and development. Athlete’s performance can be judged according to levels of events and the level of wins (gold, silver, and bronze) (Kazemi et al., 2009); and these medals are crucial for survival of sports

organizations. Selection of the right individual, for the right position, at the right time and for the right game is quite challenging for any sports organization; and, getting hold of successful athletes is their main objective. It is argued that athlete's personality may also be one of the determinants of sports performance. However, there is not enough empirical support to suggest that success in any sporting activity could be tied to any particular type of a personality.

Studies have been done to identify or highlight, what is known as an 'Athlete's personality', and results have shown effects of various personality traits on performance of athletes at individual or team level performance. The team event athletes are known as 'sociotropy' (Nia & Besharat, 2010) and different traits are found according to individual or team events. Athletes' personalities have also been assessed in the context of gender, cultures, desire to win and fear of losing, traditional/alternative sport athletes, contact/non-contact athletes with quite significant differences (Rhea & Martin, 2010; Sohrabi *et al.*, 2011; Ahmadi *et al.*, 2011). The individual event athletes are known as 'autonomous' or self-directed/ self-regulated in nature (Nia & Besharat, 2010). They acquire a combination of beliefs, attitudes and behavioral tendencies that lead them to focus on their physical functioning, distinctiveness and control over situation/environment (Beck *et al.*, 1983).

It is argued that successful athletes may possess certain personalities and attitudes that are responsible for their particular winning skills. Studies have found performance in sports to be swayed by a combination of psychological, physiological and socio-cultural factors (Athletic, 2013); and in order to attain victory, an athlete must have the best possible combination of the aforementioned factors, to outperform his/her competitors (Hays, 2006). Various studies have tried to explain athletes', physiological, sociological, cognitive and psychological aspects; in order to predict athletic behaviors in sport. The assumption that an athlete has a specific 'personality' has been explored, but with contradictory results (Shaw *et al.*, 2009). In fact, the popular belief is that there is no specific athletic personality. However, there are a number of studies wherein, psychologists have been proposing the existence of the phenomenon known as an 'athletic personality'; and have tried to identify personality characteristics that distinguish athletes from non-athletes; or those that distinguish athletes in one sport from another (Hoffman *et al.*, 2013). Studies also show, that different personality characteristics partially affect feelings, emotions and behaviours, which consequently influence the performance of individuals. Various traits are presumed to be the part of successful athletes' persona; and, accordingly, successful competitors have been found to be aggressive; affectionate; altruistic; conscientious; extrovert; enthusiastic; energetic; intellectual; passionate; non-neurotic/emotionally stable; self-determined and open-minded (Nia & Besharat, 2010). In a recent study, personality traits of athletes of gold, silver & bronze medals have been identified, and a Performance Index (PI) has been generated (Khan, & Ahmed, 2014).

Many personality traits' scales have also been developed for the purpose of assessing different personalities of individuals. There are certain models of personality such as three dimensional models, Myers-Briggs Type Indicator (MBIT), Five factor models/ Big Five inventory and many others. Studies have also tried to sketch differences in clinical symptoms and clinical patterns of athletes' personality in non-contact and contact sports using Millon Clinical Multiaxial Inventory-III manual; and, the Eysenck personality

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questionnaires (Sohrabi et al., 2011). Other sport specific measures such as: the Sport Competition Anxiety Test (Martens, 1977), is also being used to assess the anxiety level of athletes during competitions; the Competitive State Anxiety Inventory-2 (Martens et al., 1982), is yet another scale that measures anxiety, more accurately; Profile of Mood State (POMS) developed by (McNair et al., 1971), assesses moods of athletes based on six dimensions to create ‘the Iceberg profile’ (Morgan, 1980); observational techniques such as Eysenck’s Personality Inventory (EPI) and POMS, have also been employed to assess athletes’ traits and behaviors and their facial expressions (Bowen, 2013).

This study aims at understanding and identifying an athlete’s personality and its specific traits that might have a significant impact on his/her performance. We propose to use the Big-five Inventory or the Five Factor Model, as, it has been extensively studied and used in different fields. It is being applied with various combinations of different behavioral outcomes (Costa & McCrae, 2008). It provides an empirically derived definition of personality traits and a wide range of characteristics and is a well developed and a rigorously tested psychometrical measurement tool (Costa & McCrae, 1992). The Big Five personality tool, assess personality of an individual on the following factors: agreeableness, conscientiousness, emotional stability, extroversion and openness to experience (Daft, 1994; John et al., 2008).

The acronym for The Big Five is OCEAN (Costa & McCrae, 2008), which refers to the five personality traits Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, is as under

**Table 1: Big-Five**

<b>O</b>	Open- minded, originality, openness to experience, intellect, fantasy, values, actions, aesthetics	(John & Srivastave, 1999; Costa & McCrae 2008)
<b>C</b>	Conscientious, control, constraint; competence, self-confidence and achievement striving	(John & Srivastave, 1999; Nia & Besharat, 2010)
<b>E</b>	Extrovert, enthusiasm, energy, warmth, gregarious, assertiveness, excitement seeking	(John & Srivastave, 1999; Costa & McCrae 2008)
<b>A</b>	Altruistic, affectionate, agreeable; straight forward; tender-minded; trust and compliance	(John & Srivastave, 1999; Nia & Besharat, 2010)
<b>N</b>	Neurotic; Nervousness, negative affectivity, neuroticism, anxiety, hostility, depression	(John & Srivastave, 1999; Costa & McCrae 2008)

Recently, big-five has gained importance in almost every field for assessing personality traits in context of employment, health, sports, events and many others. Previous studies have used this model in the field of sports to highlight the differentiating personality features of top senior basketball athletes on the team of different team’s positions (Sindik, 2011). Big-five has also examined the differences between participants and non-

participants of risky sports to understand whether there were any specific personality traits which segregate the individuals more likely to participate in it (Tok, 2011). One more study explored the differences in traits by comparison of athlete's personality characteristics in team and individual sports (Nia & Besharat, 2010). Following the previous findings, this study also proposes to test the Big Five model on the current champions in Pakistan, and hypothesizes as follows:

### *2.1 Extroversion and Performance*

Extroversion is explained as: an “energetic approach” towards the social world; and, it also includes assertiveness, activity, sociability and positive emotionality (John & Srivastave, 1999). Extroversion makes a person assertive, outgoing, sociable and comfortable (Daft, 1994). It is argued, that a high level of extroversion leads to positive emotions such as liveliness, happiness, optimism, activity and high level of energy (David et al., 1997). These qualities also impact an athlete's performance, as he or she can overcome the negative emotions such as: hastiness, fear, worry, anger and feelings of guilt (Robinson et al., 2007).

It is also argued that “extroverts tend to be socially oriented (outgoing and gregarious), but also are surgent (dominant and ambitious) and active (adventuresome and assertive)” (John et al., 2008). A study explored the traits of guards and forwarders/ centers in basketball; and found positive effects of extroversion on forwarders/center athletes than on guards (Sindik, 2011). This study proposes to explore the positive role of extroversion on an athlete's performance.

- **H<sub>1</sub>**: Extroversion is positively associated with performance of athletes

### *2.2 Conscientiousness and Performance*

The primary definition of conscientiousness is described as “socially prescribed impulse control” which supports task and goal directed behaviors (John & Srivastave, 1999); that make the athlete to work in an organized manner to give performance in field. As a trait it is also defined as an extent to which a human is focused on specific goals and is persistent, responsible, and dependable and achievement oriented (Daft, 1994). This is an important trait for an athlete as well as individual goals. Athlete has to be dependable and responsible to achieve team and individual goal. This personality trait has been examined in sports but with different perspectives, such as, for better understanding of the differences of positions in team (Sindik, 2011; Nia & Besharat, 2010). This study purposes to examine the role of conscientiousness on the performance of athlete in achieving the level of win.

- **H<sub>2</sub>**: Conscientiousness is positively associated with performance of athletes

### *2.3 Non-Neurotic/Emotional Stability and Performance*

Emotional Stability is explained as having an even-temper and positive emotionality (John & Srivastave, 1999). It makes a person calm, self-confident and enthusiastic and emotionally stable (Daft, 1994). In contrast, neuroticism predicts negative emotions like worry, fear, hastiness, guilt and anger (David et al., 1997; Robinson et al., 2007). Emotional stability has also been studied in players, for instance, chess players have been found to be more emotionally stable (Bilalic et al., 2007). Similarly positive impact of emotional stability was seen on performance of forwarder/center athletes and positive or medium high correlation with emotional stability was traced (Sindik, 2011). On other

hand participants of risky sports have shown lower level of neuroticism (Tok, 2011), which implies, that they are more stable emotionally. This leads to the following hypothesis.

- **H<sub>3</sub>:** Emotional stability is positively associated with performance of athlete.

#### *2.4 Openness to Experience and Performance*

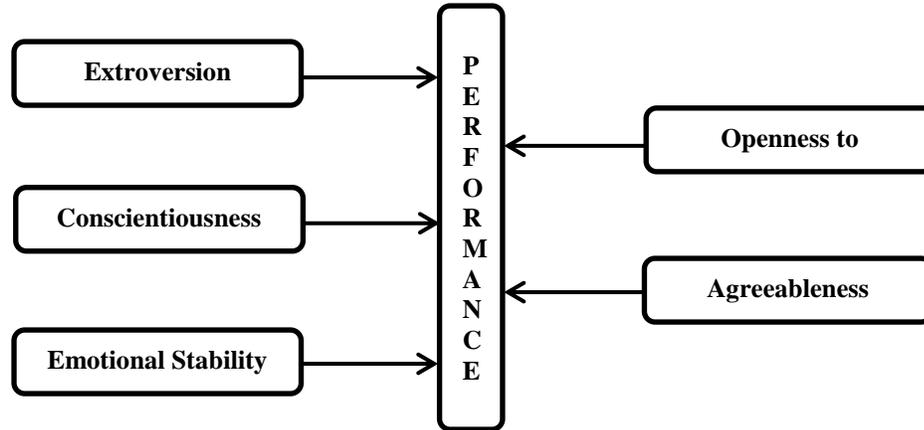
Openness to experience is explained as the depth, complexity, originality and breadth of a human's "experiential and mental life" (John & Srivastave, 1999). Furthermore it is defined as the seeking of enhancement or improvement through senses and mind (Zuckerman, 1984). It is also explained as the extent to which a person has continuum of interest and is creative, imaginative, artistically sensitive and willing/absorbing to consider innovative ideas (Daft, 1994). These traits if found in athletes will allow them to use their creativity, intellects, imagination and flexibility. Individuals who are open to experiences are also sometimes known as intellectual or imaginative (Eswaran et al., 2009) and are typically flexible, creative and intellectually oriented. Openness to experience trait is beneficial for career success (Heineck, 2011) will than allow to use their creativity, intellects, imagination and flexibility. Openness to experience in athletes may have a role as a predictor of high performance.

- **H<sub>4</sub>:** Openness to experience is positively associated with performance of athletes.

#### *2.5 Agreeableness and Performance*

Agreeableness has been defined as "pro-social and communal orientation" towards others rivalry and it also includes components like altruism, trust, tender minded and modesty (John & Srivastave, 1999). Agreeableness makes a human being good natured, forgiving, cooperative, likable, trusting and understanding (Daft, 1994). The study highlights three main components of agreeableness which are altruism, trust and compliance (Nia & Besharat, 2010); which mean that the athletes, who are more agreeable, may be easily influenced by others. They are not able to make decisions at the spot. As, we argue that the athletes, during competitions, have to make decisions by themselves and at the spot. Mostly the human like such persons who are agreeable, but they are not suitable for contact sports especially. On this basis, we argue that athletes who are more agreeable are less successful. This study is exploring the inverse relation between agreeableness and athlete's performance.

- **H<sub>5</sub>:** Agreeableness is negatively associated with performance of athlete.



**Figure 1: Trait Hypothetical Framework**

### 3. Methodology

#### 3.1 Procedure and Participants

The questionnaire, for the study was distributed with the help of Pakistan Olympic Association, which sent the same by post to all the national champions, living in different cities of Pakistan. The respondents were briefed through a phone call, on: the topic of research, the theme of the questionnaire, the importance of their contribution and on how to avoid biasness. The thematizing technique was used to make the athletes refresh their memories; visualize and feel the tournament temperament; prior to filling up the questionnaires (Kvale, 1996). It took almost three months to get responses from all the respondents. The target population for this study is all the national champions of contact sports. The purposive sampling technique was used to sample the national karate, judo, taekwondo, boxing and wrestling champions, who had won titles in championship tournaments held in Pakistan during the preceding three years i.e., 2010, 2011, 2012; and average, each event entails 3 champions in a championship tournament. Hence, the sample size comprised of 135 contact sport athletes, including 71 males and 64 female champions, who had achieved championship titles in the last three years. After eliminating the incomplete questionnaires, we had 91 completed responses, making the study response rate equal to 67%.

#### 3.2 Measures

Personality traits have been measured through the brief Ten Item Personality Inventory (TIPI) of the Big Five (or Five-Factor Model) personality dimensions, as adopted from Gosling et al. (2003). The Big-Five framework has received considerable support and has become the most extensively researched and widely used model of personality (John & Srivastava, 1999; Gosling et al., 2003). The measures were incorporated in a self-administered questionnaire; which was translated into Urdu from English, for complete understanding of the respondents; and, to overcome the cultural and language barriers (Brislin, 1976). Back translation was also got done to determine the consistency in meanings. Inter-rater technique was used to evaluate Urdu translated version of final questionnaire, which resulted in the inter-rater coefficient  $r = .974$ ; which supports the “conceptual equivalence” of the Urdu translated final version.

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Performance was taken as the dependent variable for this study. Performance of athletes was measured through calculating the ratio of: achieved gold medals over the number of participated events. We have taken only the gold medal winners as this is highest level of achievement in an event. It is posited by Kazemi et al. (2009) that the medal winning athletes possess specific characteristics that differentiate them from the other unsuccessful athletes (Kazemi, et al., 2009).

### 4. Results: Correlations and Regressions Analysis

The study respondents consisted of 56.32% of males and 43.68% of females; all holding championship titles. However, the gender difference has not been analyzed in the current study.

The educational status of the respondents reveals that the majority of the athletes were not highly qualified; 23.8% of athletes did not have any academic qualification whatsoever; 9.5% of them only had a primary level of education; 28.6% of athletes had acquired secondary level; whereas, 23.8% of athletes had only completed their graduation; and, only 14.3% of the athletes had completed their Master's degree; which justifies the need of translating the study instrument into Urdu.

#### 4.1 Descriptive Statistics

Table 2 presents the means, standard deviations and the correlations among the controls and study variables. The results show that performance is significantly and positively related to extroversion ( $r = 0.697$ ,  $p < 0.01$ ), conscientiousness ( $r = 0.766$ ,  $p < 0.01$ ), emotional stability ( $r = 0.793$ ,  $p < 0.01$ ), openness to experience ( $r = 0.732$ ,  $p < 0.01$ ) and negatively related to agreeableness ( $r = -0.499$ ,  $p < 0.01$ ). The significance of these correlations provides initial support to our study hypotheses.

**Table 2: Means, Standard Deviations (SD) and Correlation Matrix**

S #	Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9
1	Age	24.38	4.93	1								
2	Education	1.52	0.503	-0.171	1							
3	Tenure	1.42	0.579	-0.073	-0.024	1						
4	Gender	1.45	0.500	0.069	0.036	-0.005	1					
5	Extroversion	3.40	1.254	0.172	0.073	-0.134	0.098	<b>(0.840)</b>				
6	Conscientiousness	3.49	1.235	0.085	0.085	-0.075	0.094	0.823**	<b>(0.785)</b>			
7	Emotional Stability	3.36	1.295	0.080	0.093	-0.063	0.105	0.786**	0.883**	<b>(0.844)</b>		
8	Openness-to-Experience	3.52	1.275	0.177	0.073	-0.205	0.075	0.682**	0.736**	0.701**	<b>(0.704)</b>	
9	Agreeableness	2.39	1.166	-0.091	-0.035	0.143	-0.048	-0.611**	-0.481**	-0.446**	-0.565**	<b>(0.781)</b>
10	Performance	1.35	0.551	0.079	0.170	0.140	0.035	0.697**	0.766**	0.793**	0.732**	-0.499**

N = 91,  $p^{**} > 0.01$ ,  $p^* > 0.05$ , Reliability co-efficient of each variables are in parentheses

#### 4.2 Hypotheses Testing

Linear regression analysis was conducted to test how well the Big Five traits predicted performance. Four principle assumptions that is linearity, independence, homoscedasticity and normality of the error distribution have also been checked. With a highly significant  $(5, 85) = 39.131, p < .0005$ , our regression model is a good fit of the data variables; also, the value of Durbin Watson  $d = 1.632$  (which is between the two critical values,  $1.5 < d < 2.5$ ), also satisfies the assumption of linearity and we can assume that there was no first order linear auto-correlation in our linear regression data. The Tolerance values ranged between 0.24 to 0.56, which are all greater than 0.1; and, the Variance Inflation Factor(VIF) ranged between 1.7 to 4.0 which are all  $< 10$  for all variables; and are well within the prescribed limits, which implies that there is no problem of multi-collinearity in our regression model. The homoscedasticity and normality was assessed using the P-P-Plot of  $z^*_{presid}$  and  $z^*_{pred}$ , which indicated no tendency in the error terms. After testing the assumptions, the study hypotheses were tested. Study proposed that extroversion is positively associated with performance of athletes ( $H_1$ ). In Table 3 (Model 1), when we regressed all the four control variables i.e. age, education, tenure, gender, the regression coefficients for all the control variables were insignificant. However, when we regressed extroversion (independent variable) on performance along with the control variables in Model 2, the regression coefficient was significant ( $\beta = 0.690, p < 0.01; \Delta R^2 = 0.652$ ), thus  $H_1$  is fully supported.

**Table 3: Linear Regression Dependent Variable is “Performance”**

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<b>Control</b>						
Age	0.100	-0.021	0.031	0.032	-0.029	0.059
Education	0.184	0.117	0.111	0.103	0.113	0.162
Tenure	-0.129	-0.047	-0.080	-0.086	0.010	-0.064
Gender	0.021	-0.036	-0.042	-0.053	-0.022	0.002
<b>Independent</b>						
Extroversion		0.690**				
Conscientiousness			0.752**			
Emotional Stability				0.781**		
Openness to Experience					0.732**	
Agreeableness						-0.478**
<b>R<sup>2</sup></b>	0.058	0.710	0.607	0.650	0.550	0.280
<b><math>\Delta R^2</math></b>		0.652	0.549	0.592	0.492	0.222

Similarly, the study proposed that conscientiousness is positively associated with performance of athletes ( $H_2$ ). In order to test the hypothesis, when we regressed conscientiousness on performance in Model 3, the regression coefficient was found significant ( $\beta = 0.752, p < 0.01; \Delta R^2 = 0.549$ ); thus  $H_2$  is fully supported. The third hypothesis that our study proposed was: emotional stability is positively associated with

performance of athletes (H<sub>3</sub>). In Model 4, when we regressed emotional stability on performance, and the regression coefficient was found to be significant ( $\beta = 0.781$ ,  $p < 0.01$ ;  $\Delta R^2 = 0.592$ ); thus, H<sub>3</sub> is fully supported. We also proposed that openness to experience is positively associated with performance of athletes (H<sub>4</sub>). In Model 5, when we regressed openness to experience on performance, the regression coefficient was again found to be significant with  $\beta = 0.732$ ,  $p < 0.01$ ;  $\Delta R^2 = 0.492$ ; thus, fully supporting H<sub>4</sub>. Finally, we had proposed that agreeableness is negatively associated with performance of athletes (H<sub>5</sub>). In Model 6, when we regressed agreeableness on performance, the regression coefficient with  $\beta = -0.478$ ,  $p < 0.01$ ;  $\Delta R^2 = 0.222$  was found to have significant association), thus H<sub>5</sub> is also fully supported.

### 5. Analyses & Discussion

The main objectives of this study were to explore and identify the existing personality traits of the champions by using the Big Five personality model. We have tested the dispositional traits, to analyze their impact on the performance of athletes. It shows that the four traits, i.e., extroversion, conscientiousness, emotional stability and openness to experience, notch positive significant status with performance; whereas, lesser agreeableness yields better performance. All of these personality traits have been observed to be more prominent in athletes with higher level of performance. *Since*, the results of our first four hypotheses are consistent with previous studies (Eswaran et al, 2009; Nia & Besharat, 2010; Sindik, 2011; Sohrabi et al., 2011; Tok, 2011).

Openness to experience has been found to be positively related to performance; which implies, that open mindedness in athletes can enhance their performance. This is perhaps because, athletes with this trait can bear the pressure of a new environment; their open mindedness provides them with the pitch to handle competition related stresses, as they are more flexible, creative and intellectually oriented; which helps them in performing well in competitions, even under unfamiliar surroundings. Thus, this study supports the contention, that openness to experience is an important trait that has been found to have significant positive impact on the performance of all the champions. Extroversion is another important trait that has been found to have a positive effect on performance.

The athletes who have been identified as extroverts in this study have emerged as highly confident, excitement seekers and enthusiasts; who perhaps helps them in: overcoming fears, insecurities, negative emotions, worry or anger; and thus, performing better in the face of challenges. Conscientiousness; as a trait, helps in developing impulse control, and focus on specific goals; it makes a person persistent, responsible, dependable and to work in an organized manner. The high performance of the athletes in this study supports our contention: that, athletes who are more focused and regulated are more dependable and responsible, when it comes to achieving team and individual goals; and so, have better chances of being victorious. Emotional stability is described as having an even-temper and positive emotionality. It makes a person calm and self-confident, which also has been observed to be prominent in the champions; the reason maybe, because: keeping oneself composed in tougher situations such as during competitions, enables better assessment of opponent's moves, strengths and weaknesses, thus allowing sharper counter moves. As far as agreeableness is concerned, it makes a person forgiving, altruistic, tender minded, understanding, trusting and compliant; which may not yield favorable results when faced with an opponent in a competition. Mostly because of sympathy or passivity for the opponent may make the athlete weak and jeopardize his/her own position.

This study provides an important insinuation for the sports industry and the sports organizations. Sport markets need top performers, and what makes a champion is not only dependent upon good genetics, innate talent and physical strength; but, it also depends on certain personality traits that can possibly be the differentiating factors. This research argues that personality traits may play a significant role on athlete's performance in competitions; and organizations can build up their own sport specific personality inventory and train their potential future champions to achieve highest levels of wins. Previous research also stresses on the need for having this practice for the sake of "*optimal development of human resource*" (Goldberg, 1993).

## **6. Limitations and Future Directions**

As far as limitations are concerned, there are quite a few of them. Firstly, the study only takes selected contact sports; other contact sports or non-contact sports have not been included; future studies may explore the relationship between personality traits and performance of athletes of all other sports. Secondly, the study is based on a cross-sectional data, which means it is not able to provide causal reasoning. There is a need for longitudinal studies on this perspective to get a more comprehensive understanding; accurate results; and, to make more conclusive predictions. Another limitation of the study is the problem of common method biases, as the self-reported measures have been used to obtain the data (Podsakoff et al, 2003). Furthermore this study is only based on the Big-Five model of personality traits, and there are many other personality traits, such as: aggressiveness; self-determination and passion, which may be explored; as they might be indicative of varying winning patterns in athletes; and, many studies are focusing on the same (Frijda et al., 1991; Vallerand et al., 2003; Murnieks et al., 2014; Vallerand et al., 2008; Tomar & Singh, 2012). These big five must be incorporated in one study to identify the actual champion's traits.

## **7. Conclusion**

Who will be the next Muhammad Ali, Tiger Woods, Venus Williams, or Michael Jordan is a question the answer to which is of global interest. However, predicting success in sports can be quite a daunting task; as every top athlete has a specific physical, psychological and sociological make-up; depending upon the type of sport, the age factor, the training received; the genetic combination and the innate talent.

Hence, sports organizations make every effort, be it extensive trainings, provision of best coaches or a complex and a dynamic environment for maintenance of their super stars. These organizations are always in search of athletes who have the potential of being super stars; and, try to prepare them for competitions. But despite all efforts, only few reach the top. Perhaps because so far, sports industry has been focusing only on the external necessities, i.e. training, discipline, lucrative packages, sports branding, sports drugs, medicines, physical strength and stamina etc. Perhaps there is need to focus more on the internal or what we call psychological factors.

The assumption that an athlete has a specific 'personality' has been explored, but with contradictory results. Various studies have explored sportsmen's physiological, cognitive, psychological and sociological, aspects to understand as also to predict athletic behaviors in sports. Although, the popular belief is that there are no specific athletic personality traits; however, it is also argued that athlete's personality is one of the determinants of sports achievement and performance and successful athletes can be judged through a

combination of their skills, personality and attitudes. Studies have been also been done to identify or highlight, what is known as an 'athlete's personality', and results have shown effects of various personality traits on performance of athletes at individual or team level performance. Athletes' personalities have also been assessed and significant differences noted in the context of gender, cultures, desire to win and fear of losing, traditional/alternative sports athletes and contact /non-contact athletes.

The present study is a humble effort that provides empirical evidence of the Big-Five personality traits peculiar to the high performers or more aptly, the top rankers and the champions. What separates 'the good from the great' or what makes a champion is not only dependent upon good genetics, innate talent and physical strength; but, it also depends upon the mental powers and certain personality traits such as: emotional stability; mental toughness; positive attitude; focus; the killer instincts and their whetted skills to anticipate opponents' moves (Twist & Hutton, 2007). Competition involves and demands high level of performance especially in sports. Athletes are focused and their performance is highly focused particularly in the developed countries and in European culture. Research too is being conducted in that part of the world. However, this study is the first of its kind in the context of an Asian country and in an Asian culture. For the first time, National contact sports champions in Pakistan have been studied for identification of their peculiar personality traits. The emergent pattern can be developed into a more sophisticated identifier or a predictor, with extensive empirical studies in future; involving diverse populations, gender differences, cultures, ages and regions.

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