

Influences of Big-Five Personality Variables and Sport Preferences among Student Athletes in Universities in North East Zone, Nigeria

Mary N. Pindar; Stephen S. Hamafyelto & Muhammed W. U. Gaya
*Department of Physical and Health Education
University of Maiduguri, Borno State, Nigeria.*

Abstract

The study investigated the influence of Big-Five Personality characteristics variables and sport preference among student-athletes in Universities in North-East Zone Nigeria. 400 male and 217 female student-athletes from University sports of team and individual sports (age: mean = 22:50, SD:1.32) were sampled and rated on the AIR self-determination scale student form questionnaire ($r=.79$ to $.85$) and behavioural regulation in sport preference questionnaire BRSPQ ($r=.80$ to $.84$). findings revealed the composite effect of Big-five personality on sport preference was tested significant ($p<.05$); with 10% of the variation accounted for by the subscales. This implied that the Big-five personality of openness to experience, extraversion, conscientiousness, agreeableness and neuroticism jointly and significantly predicted sport preference among student-athletes in Universities in North-East Zone, Nigeria. The composite significant effect found between sport preference and the Big-five personality traits can be utilized to make predictions of behaviour prospects of these student-athletes within and outside sport settings.

Keywords: Big-five personality variables, sport preference, student athletes.

Introduction

Debates on personality research after decades of controversies and nomenclature has been studied with the hopes of acquiring more knowledge about human nature. How personality can influence one's thoughts, feelings and behavior was the first task to understand the structure of personality. Copious researchers have used different approaches to study personality from the psychoanalytic perspective to the trait theorists. However, McCrae and Costa (2008) argued that the five factor model (FFM) is one of the most common ways to view profile, preferences and research on personality. The five domains presented by McCrae and Costa includes; extraversion, conscientiousness, which have been unduly studied in different settings ranging from clinical workplace and academics.

Researchers however, have considered the personality traits in sport settings between athletes and non-athletes, athletes of different sports preferences and the traits associated with the greatest athletic success. Such a process as opined by McCrae and Costa (2008) was used to determine the Big-Fiver Personality Model (BFM). The Big"-Five" as a title

was selected not to reflect their intrinsic greatness but to emphasize that each of the factors was extremely broad.

Similarly, John and Strivastava (1999) strongly suggest that personality trait structure is universal and can be found in almost any measure of personality including the analysis of trait objectives in many languages. Costa and McCrae (1992) posited that the Big-Five traits and the environment also play its role, and are highly stable overtime and shaped by biological (genetic) factors. Long history, cross-cultural replication, empirical validation across many methods and instruments make the Big-Five model a basic discovery of personality psychology and sport.

In everyday language, personality has various implications, yet what is often meant is efficacy and social desirability. Personality is sometimes defined based on the palpable, dominating or typical traits of an induced athlete and on the basis referred as an extravert or an introvert, an aggressive or reserved athlete. Stevenson, Blair and Goldberg (2013) view personality as the psychological qualities that contributes to an individual athlete's distinct patterns of behaviour, feeling and thinking. Personality is also seen as source of athlete's attitude established on individual athlete's preference of sports and physical activities, and the set of characteristics within the individual athlete influencing his/her cognitive and behavior in different sport preference context (Stevenson, Blair and Goldberg, 2013).

Personality differs in terms of definition and formation by different theorists, but generally refers to the basic consistent patterns of human behaviour (Eysenk and Caltel, 2000). Heredity is one of the important determinants of personality as further suggested by Eysenk and Caltel (2000). Eysenk and Caltel (2000) often study twins (monozygotic and dizygotic) and compare them to establish the level of heritability of each personality trait. Conversely, scientists like Kretschner and Sheldon (2011) are of the opinion that physical shape determines the personality traits of athletes. However, Stevenson, Blair and Goldberg (2013) maintained that psychological differences (size of the inner glands, the activity of the autonomic nervous system and coordination between different neurotransmitters) leads to the foundation of different personality and sport preference by athletes.

On the contrary, Allport (2002) argued that personality is not entirely under the influence of heredity nor physiological variables but the dynamic organization with the individual athlete and of those psycho-physical systems that determines their unique adjustment to the environment. Personality is therefore a composite of mind and body that work in harmony as a single unit. Allport (2002) stressed that there are countless number of genetic composition within the body which are unique (except for monozygotic twins). Thus, different compositions along with personal experiences and environmental factor lead to generation of thousands of unique compositions that are distinct from each other. Therefore, cognitive, behavioural, psycho-analytic, lifespan and social learning approaches explained why many approaches of personality have been introduced.

Sociability, assertiveness, talkativeness, and high group activity are the personality characteristics, symbols of extraversion. Athletes rated high in this personality prefer team sports. Football, basketball, hockey, volleyball, handball (McCrae, 2012) on the contrary athletes rated low on extraversion enjoy loneliness and prefers individual sports such as mind games (scrabble, computer games) chess, ludo, whot, playing cards, tennis and table tennis. Larsen and McCrae (2012) viewed extraversion as a trait that is marked by pronounced engagement with the external world and enjoy interacting with people and are often perceived as full of energy and action-oriented individuals, conversely, introverts have lower social engagement with the external world who tend to be quite, low-key, deliberate and are independent of their social world than extroverted athletes.

Research findings has also shown that there are variations in the personality characteristics of athletes, depending on the athletes level of engagement in their activities

(elite or amateur) and the type of activity in which the athlete is engaged (team or individual). Aluja, Martin and Wright (2008) opined that the level of engagement and type of sport that an athlete chose to participate in, is predetermined by the athletes-personality characteristics. Sports preference by athletes rated high on this domain include; dual sports such as tennis, table tennis and mind games such scrabble (Costa and Goldberg, 2012).

The openness to experience factor assesses an athlete's level of broadmindedness, being imaginative, original and curious. Like extraversion, athletes rating high on this domain prefer team sports and outdoor activities. Literature addressing personality traits has also linked openness to experience characteristics with extraversion traits (Devoa&Canger, 2004). However, non-contact sport athletes reported being more open than contact sport athletes. Athletes perceived as open are considered to be strong-willed and exhibit more positive reactions to new experiences and ideas. Participating in an individual sport requires athletes to rely on their own physical and cognitive abilities to perform. They often do not have the luxury of teammates and are largely forced to embrace and adapt to new athletic challenges on their own.

Agreeableness assesses the quality of interpersonal interactions with others. There are six lower order facets of agreeableness which include empathy, sympathy, warmth, pleasantness, cooperation and straightforwardness (Judge, Rodell, Klinger, Simon & Crawford in press). Athletes that score high on the agreeableness trait can be described as softhearted, forgiving, honests and trusting (Trninic *et al*, 2008). Individuals with low scores are described as mocking, rude, vengeful or manipulative (Trninic *et al*, 2008).

Agreeableness trait is typically associated with developing interpersonal relationship (Beauchamp *et al*, 2007). Graziano (1996) found that more agreeable individuals tend to use more accommodating strategies during conflicts than individuals with lower scores, who conversely prefer more coercive approaches (as cited in Beauchamp *et al*, 2007). Thus it would appear that the agreeableness trait would be associated with greater levels of team cohesiveness and positive interactions. Bradley, Baur, Banford and Psoythlethwaite (2013) found that the agreeableness trait has a positive impact on performance because it has an effect on communication and cohesion. However, more research is necessary to confirm these results.

Conscientiousness domain describes the goal-oriented behaviours in an athlete. The lower order facets include: achievement-orientation, self-discipline, purposefulness, deliberation, tidiness and cautiousness. Athletes with higher conscientiousness scores are often described as self-disciplined, punctual and ambitious, those athletes rated on low scorers are described as lazy, unreliable, or inconsiderate (Trninic, Barancic, and Nazor, 2008).

Previous research on conscientiousness has shown positive associations between the conscientiousness trait and athletic achievement. In two studies that utilized the FFM, researchers found positive correlations between the conscientiousness trait with football rankings (Tran, 2012) and soccer game statistics (Piedmont, Hill & Blanco, 1997b). In another study, anxiety, confidence and personalities were tested among two groups of elite and non-elite judo athletes. Researchers found that the conscientiousness trait predicted anxiety and self-confidence (Matsumoto, Takeuchi, Nakajima & Iida, 2000). Similarly Matsumoto (2000) suggests that the conscientiousness trait may be related to training adherence, therefore creates more confidence and less anxiety in judo athletes.

Neuroticism trait accounts for emotional stability within an individual. Neuroticism domain have lower order facets of low tranquility, high impulsivity, high hostility, anxiety, depressive outlook and self-consciousness (Judge *et al*, 2012). Athletes with higher neuroticism scores tend to be described as worrying, nervous, insecure and inadequate (Trninic *et al*, 2008). Low scorers represent emotional stability and can be described as calm,

relaxed and secure (Trninicet *al*, 2008). In the sport setting, it is important for athletes in sport safety to cope with stress effectively to produce desirable sport performances. Kaiseler, Polman and Nicholls (2012) investigated the relationship between the five personality dimensions and coping and coping effectiveness with sample of over 480 athletes and researchers found that the neuroticism trait predicted higher stressor intensity, predicted lower perceived stressor control, was associated with more emotion and avoidance coping strategies and less problem-focused coping strategies (Kaiseleret *al*, 2012). Neuroticism trait is a vital indicator of athlete stress and coping. It would be appropriate to address athletes with higher neuroticism scores and provide them with more effective coping strategies. Athletes with higher neuroticism ratings should be provided with more effective coping strategies.

Statement of the problem

The Big-five are collectively, a taxonomy of personality traits. Sport psychologists are unanimous in having both local and universal norms for athletes choice of sports and time devoted for training. The personality traits of athletes also have direct influence on choices athletes make for their sports career and life experiences. Sport participation and performances of University athletes in local, national and international sport have not been too encouraging. Many factors have been implicated by researchers and professionals for instance lack of facility and equipment, training schedules and finances. Focus has always been made on organization of university sports. There are variety of factors that influence choice of sport which have receive attention from researchers, including Big-five and sport preference. However, some of the results are conflicting and besides not much studies have been carried out on university athletes. A coordinative system (the Big-five personality characteristics variables of extraversion, conscientiousness, openness to experience, agreeableness and neuroticism) that map which traits that match specific sports among athletes could be lacking in sports area in Nigeria in general and the North-East in particular. Therefore athletes choose or prefer sports because of significant others which they may not do well or go beyond certain level. Subsequent upon this assumption therefore Big-five personality characteristics variables was employed to predict sport preference of student athletes with the aim of identifying which traits goes together for sports preferred by athletes for their sport participation. Hence the study was conducted to investigate the influence of Big-five personality characteristics variables and sport preference among student-athletes in universities in North-East Zone, Nigeria.

Methods

Participants

The sample of this study was made (400) male and (217) female students athletes in Universities in North-East Zone, Nigeria. Their sport involvement consists of soccer, basketball, hockey, handball, volley ball, tennis, judo and athletics. Their age range was ($m=22.50$: $SD=1.32$) all the participants responded to the two sets of questionnaires on Big-five Project-Personality Text (BPPT) and Behavioural Regulation in Sports Preferences Questionnaire (BRSPQ).

Measures

The Big-five project-personality test (BPPT) was developed by Jeff and Oliver (2014) with a 46 item statement of 4 subscales- of how I feel, thinks I do, what happens at home, and what happens at school was used as independent measures. The questionnaire was in 5 Likert format in which response to the item statement is indicated by the extent of agreement

and disagreement to the statement. Total sources of big-five project personality test (BPPT) score was calculated by summing the 46 rated items. A criterion for item retention on a factor was set at 0.50. Cronbach Alpha for the four subscales ranged from 0.81-0.89 for the study. This values were all above the generality accepted criterion of 0.70 (Nunnally, 1978). Sport preference was measured with behavioural regulation in sport preference questionnaire. (BRSPQ) and was developed by (Lonsdale, Hodge and Rose 2008). It is a 36 item statement with 3 Likert format in which response to the item statement is indicated by the extent of very true and not true at all to the statement.

Procedures

Permission was sought from the ethical committee in University of Maiduguri and team officials to conduct the study. The consent of the participants was also obtained. The researcher and the research assistants explained the study to the participants. The Big-five Project-Personality Test Questionnaire (BPPTQ) and the Behavioural Regulation in Sport Questionnaire (BRSPQ) was then administered to the participants during the NUGA preliminaries training session in a group setting. They were assured of the confidentiality of their responses prior to data collection.

Analysis

The statistical package for the social sciences (SPSS version 20) was used for the analysis of the data, the internal consistency for the Big-five and sport preferences was determined using the Cronbach alpha coefficient to determine the reliability of the instruments, while the multiple regression was used to determine whether the Big-five subscales will significantly predict sport preference of student-athletes at 0.05 alpha level.

Results

Table 1: Composite Effect of Big-5 Personality on Sport Preference Showing the Anova Summary of the Regression Analysis

R=.316						
R ² =.100						
Adj. R ² =.092						
Standard Error=9.58479						
Model	Sum of Squares	Df	Mean Square	F	Sig. (p value)	Remark
Regression	6209.372	5	1241.874			
Residual	56131.493	611	91.868	13.518	.000	Sig.
Total	62340.865	616				

The ANOVA Summary Table

Table 1 above revealed the composite effect of Big-five personality on sport preference which was tested significant ($F_{(5,611)}=13.518$; $R=.316$, $R^2=.100$, $\text{Adj.}R^2=.092$, $p<.05$); with about 10.0% of the variation accounted for by the subscales. This implied that the Big-five personality subscales of openness to experience, extraversion, conscientiousness, agreeableness, neuroticism jointly and significantly predicted sport preference. Hence the null hypothesis was rejected. The composite significant effect found between sport preference and the Big-five personality traits can be used to make predictions of behavioural outcomes of these student athletes within and outside the sporting arena based on the results of this study.

Table 2: Parameter Estimate of the Relative Contribution of Big-5 Personality Subscales on Sport Preference

Subscales	Unstandardized coefficients		Standardized coefficients Beta (β)	T	Sig	Remark
	B	Std. Error				
(Constant)	70.052	2.287		30.630	.000	
Openness to experience	.354	.132	.196	2.676	.008	Sig.
Extraversion	.767	.149	.314	5.139	.000	Sig.
Conscientiousness	.304	.110	.245	2.771	.006	Sig.
Agreeableness	.154	.137	.071	1.122	.262	NS
Neuroticism	.039	.063	.033	.613	.540	NS

* Significant at $p < .05$

Table 2 showed that openness to experience ($\beta = .196$, $t = 2.676$, $df = 5$, $p < .05$), extraversion ($\beta = .314$, $t = 5.139$, $df = 5$, $p < .05$) and conscientiousness ($\beta = .254$, $t = 2.771$, $df = 5$, $p < .05$) independently and significantly contributed to sport preference, while agreeableness ($\beta = .071$, $t = 1.122$, $df = 5$, $p > .05$) and neuroticism ($\beta = .033$, $t = .613$, $df = 5$, $p > .05$) did not. The implication was that, the Big-five personality subscales of openness to experience, extraversion and conscientiousness independently had significant predictions on sport preference (criterion variable), while agreeableness and neuroticism did not. Hence, the null hypothesis which stated that there would be no relative contribution of openness to experience, extraversion and conscientiousness to sport preference was rejected.

Discussion

Researchers believed that the Big-five is the sufficient, yet comprehensive taxonomy to describe personality and its traits (McCrae et al, 2012). Sport preference related to athletes sport performance and achievement according to Tran (2012) could be attributed to the Big-five factors: extraversion, conscientiousness, openness to experience, agreeableness and neuroticism. Similarly, athletes' natural inherited ability, skill acquisition, physical fitness level and socio-psychological elements such as personality and emotional strength (Tran, 2012) has always been a topic of interest for research in terms of its influence with athletes sport preference and high sport performance output. All the Big-five personality subscales studied in this research had significant predictions on sport preference. The strongest predictor of the Big-five subscales was the extraversion factor, while the least subscale predicting student-athletes' sport preference was the agreeable factor. This lend credence to the study of Costa and Goldberg (2012) in which it was stated that the most consistently reported personality predictors and trade with the strongest influence to team sport performance is extraversion. Similar predictive result was found for openness to experience, conscientiousness and neuroticism predicting student-athletes sport preference.

The Big-five factors is seen as one of the most widely used models in describing personality traits. Utilizing the Big-Five Personality Model (BFM) Courneya and Helstn, (2005) examined sports behavior and personality using (BFM) with 264 university undergraduate students. Researchers found a negative correlation with sports for neuroticism while positive correlation were found for extraversion and conscientiousness. The result also revealed that athletes who scored high on extraversion prefer team sports or to exercise in groups. Whereas athletes who scored high on openness to experience prefer

outdoor activities compared to those athletes who scored high on agreeableness that preferred aerobics.

According to Friedman, Goldberg and Liu (2011), coaches understand the characteristics and personality traits that athletes possess impact team dynamics. One particular characteristics coaches desire in athletes is self-determination in their choosing sports. Most coaches rely on both physical and personality attributes such as; work ethics, receptiveness to coaching, willingness to listen and learn, competitiveness, honesty, respect, self discipline, integrity and trust more than physical attributes when evaluating their teams and athletes.

Recommendation

Student-athletes generally are not aware of their own behaviour, personality traits, therefore lack of knowledge for recognizing their personalities may create a big hurdle in their choice of sport. Therefore, student athletes should be guided by the sport psychologists and their coaches to enable the athletes match their personality characteristics with their rightful choices of sports they prefer for optimal performance.

References

- Allen, M. S., Greenlees, I., & Jones, M. V. (2013). Personality in sport: A comprehensive review. *International Review of Sport and Exercise Psychology*, 6, 1-47.
- Allport D. C. (2002) Perceived motivational climate and intrinsic motivation in school physical education classes. *European Journal of Psychology of Education*, 9, 241 – 250.
- Beauchamp, M. R., & Eys, M. A. (2007). *Group Dynamics in Exercise and Sport psychology: Contemporary Themes*. New York: Routledge.
- Blair, N. & Goldberg, N. R (2013). Goal striving, goal attainment and well-being: Adapting and testing the self-concordance model in sport. *Journal of Sport and Exercise Psychology*, 29, 763 – 782.
- Costa, P. T & Goldberg I. R (2012). The exercise motivation scale: It's multifaceted structure and constructs validity. *Journal of Applied Sport Psychology, and Individual Differences*, 28,169-187.
- Costa, P.T.& McCrae, R.R. (1992). The NEO Personality Inventory R: *Journal of Professional Manual*. Odessa, FL: Psychological Assessment Resources.
- Eysenck, H. J & Caltel, N. (2000). An investigation of the five-factor model of personality and coping behavior in sport. *Journal of Sports Sciences*, 29, 8, 841 – 850.
- Eysenck, H. J. (1997). Personality and experimental psychology: The unification of psychology and the possibility of a paradigm. *Journal of Personality and Social Psychology*, 73, 1224-1237.
- Friedman, R., Bryan, C. L.& Miller, J. D. (2006). Extraversion, neuroticism, psychoticism and recreational choice. *Journal of Personality and Individual Differences*, 12, 737-745.
- John, O. P. & Strivastava, S. (1999). "Trait names: A Psycholexical study". *Journal of Psychological Monographs* 47,211-216.
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87(4), 765-780.
- Kaiseler, M., Polman R. C. J., & Nicholls, A. R. (2012). Effects of the Big Five personality dimensions on appraisal coping, and coping effectiveness in sport. *European Journal of Sport Science*, 12, 62-73

- Krestchner, M. N & Sheldon M. S. (2011). Personality and Personal projects: Linking Big Five and PAC units of analysis. *Journal of Personality*, 60, 501-525.
- Lonsdale, C., Hodge, K., & Rose, E. A. (2008). The Behavioral Regulation in Sport Questionnaire: instrument development and initial validity evidence. *Journal of Sport & Exercise psychology*, 30, 323-355.
- McCrae, R. R., & Sutin, A. R. (2007). New frontiers for the five-factor model: A preview of the literature. *Social and Personality Psychology Compass*, 1, 423-440.
- McCrae, R. R., Gaines, J. F., & Wellington, M. A. (2012). The five-factor model in fact and fiction. In I. B. Weiner, H. A. Tennen, & J. M. Suls, (Eds.), *Handbook of psychology, volume 5, personality and social psychology 2nd edition* (pp. 65-91). Hoboken, New Jersey: Wiley.
- McCrae, R.R.& Costa, P. T. (2008). “An introduction to the five-factor model and its applications”. *Journal of Personality* 60,175-215.
- Piedmont, R. L. (1997). Test review: The NEO PI-R. *Newsnotes*, 32(4), 3-4.
- Piedmont, R. L., Hill, D. C., & Blanco, S. (1997). Predicting athletic performance using the five-factor model of personality. *Personality and Individual Differences*, 27, 769-777.
- Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin*, 135(2), 322-338.
- Pulford, Reeve, J., McCrae, R. R. & Costa, P. T. (2011). “Big-Five factors and facets and the application of behavior”. *Journal of Personality & Social Psychology* 81, 524 – 539.
- Stevenson H. S. Blair, N & Goldberg L. R (2013). Psychological effects of intensive sport participation children and youth: Self-esteem and motivation. In B.R. Cahill & A.J. Pearl (Eds.), *Intensive participation in children’s sports. Champaign, IL: Human Kinetics*.
- Tran, X. (2012). Football scores on the Big Five personality factors across 50 states in the U.S. *Journal of Sports Medicine and Doping Studies*, 2(6), 1-5.
- Tran, X. (2012). Football scores on the Big Five personality factors across 50 states in the U.S. *Journal of Sports Medicine and Doping Studies*, 2(6), 1-5.
- Trninic, V., Barancic, M., & Nazor, M. (2008). The five-factor model of personality and aggressiveness in prisoners and athletes. *Journal of Kinesiology*, 40(2), 170-181.
- Wilt, J. & Revelle, W. (2008). Extraversion. In M. Leary, & R. Hoyle, (Eds.), *Handbook of Individual Differences in Social Behavior* (pp. 1-28). New York: Guilford Press.