

## **Correlation between Personality Traits, Motor Skills, and Anthropometric Measurements in Athletes and Non-Athletes**

**Mr .Pramod Gangadhar**

Research Scholar , Department of Physical Education  
Singhania University, Jhunjhunu, Rajasthan

**&**

**Dr. Md. Sayeeduddin**

Associate Professor, Department of Physical Education  
Singhania University, Jhunjhunu, Rajasthan

### **Abstract**

The present study examines the intricate interplay between personality traits, motor skills, and anthropometric measurements in both athletes and non-athletes. This study aims to contribute to a comprehensive understanding of the multifaceted relationship between psychological attributes, physical abilities, and body characteristics, shedding light on potential implications for performance in sports and daily life. A diverse sample of athletes and non-athletes was recruited for this cross-sectional study, comprising individuals from various sporting disciplines and sedentary lifestyles. Personality traits were assessed using established psychometric measures, motor skills were evaluated through standardized tests, and anthropometric measurements included height, weight, body mass index (BMI), and body composition. Preliminary analyses revealed intriguing patterns of correlation among these variables. Athletes exhibited distinct personality profiles characterized by higher levels of traits such as conscientiousness, extraversion, and openness to experience. These personality traits were found to be positively associated with superior motor skills, suggesting a potential psychological foundation for athletic prowess. Furthermore, anthropometric measurements unveiled nuanced relationships with both personality traits and motor skills. This study identified specific body composition indicators that correlated with particular personality traits and motor skill proficiency in athletes, highlighting the intricate links between psychological attributes and physical performance. In contrast, non-athletes demonstrated a different pattern of correlations, emphasizing the role of sedentary lifestyles in shaping personality traits, motor skills, and anthropometric measurements. The findings underscore the dynamic interaction between mental and physical aspects of human performance, presenting implications for sports coaching, talent identification, and personalized training programs. This study contributes to the growing body of literature exploring the intricate connections between personality, motor skills, and anthropometric measurements in athletes and non-athletes. The nuanced insights gleaned from this study pave the way for future investigations into the complex interplay of psychological and physiological factors that influence human performance across various domains.

Keywords: Personality Traits, Motor Skills, Anthropometric Measurements, University Athletes, Non-Athletes, Physical Fitness, Tailored Skill Development, Psychometric Instruments.

## 1. Introduction

Psychologists lack a unanimous agreement when it comes to defining personality. There have been various definitions put forth for personality. One such definition emphasizes the interaction between an individual's biological inheritance and their environment, considering it as the primary factor. Personality is seen as the dynamic organization of the psychophysical systems within an individual, which determine their unique adaptations to their surroundings. Throughout human history, games and sports have always been an integral part of human education. Even before the development of civilization and culture, physical exercise held great importance in human existence. In primitive societies, the need for survival compelled individuals to maintain physical fitness and strength, enabling them to withstand the forces of nature.

Understanding the intricate relationships between personality traits, motor skills, and anthropometric measurements is crucial in unraveling the complex web of factors that contribute to human performance. Against this background this research delves into the correlation among these dimensions, focusing on both athletes and non-athletes at the university level. As the realms of psychology, physiology, and athleticism converge, investigating how personality influences motor skills and interacts with physical attributes becomes pivotal. The exploration of these associations aims to shed light on potential patterns, disparities, and implications for performance in diverse populations. By examining this multidimensional interplay, this research seeks to contribute valuable insights that can inform sports coaching, talent development, and our broader understanding of the intricate dynamics shaping human capabilities in both athletic and non-athletic contexts.

## 2. Objectives Of The Study

The objectives of the study are;

- ❖ To examine the influence of personality dimensions on the performance of university athletes, irrespective of their involvement in sports;
- ❖ To evaluate how anthropometric measurements impact the performance of university athletes, encompassing both sports participants and non-athletes; and
- ❖ To assess the influence of physical fitness on the performance of university athletes, considering both sports participants and non-athletes.

## 3. Hypotheses

The present study aims to test the following hypotheses;

- H1: Personality dimensions significantly affect motor test performance;
- H2: Anthropometric measurements exhibit significant variations between university athletes and non-athletes; and

- H3: A notable disparity exists in physical fitness performance between university athletes and non-athletes.

#### 4. Database & Methodology

The present study mainly based on primary data. It has been employed a cross-sectional design, recruiting a sample of 400 participants, including 200 university athletes (100 males and 100 females) actively engaged in sports, and 200 non-athletes (100 males and 100 females) representing the general university population. Participants were selected using stratified random sampling to ensure demographic diversity. To assess personality dimensions, the researchers utilized established psychometric instruments, such as the Big Five Personality Inventory. Motor skills were evaluated through standardized tests, and anthropometric measurements included height, weight, BMI, and body composition. Physical fitness was assessed using a comprehensive fitness test battery. The statistical tools like mean, standard deviation and t-tests have been employed for analysis of data.

#### 5. Sample Design & Size

The sample distribution for the study is outlined in Table 1. It comprises 200 participants from the university setting, with an equal representation of 100 males and 100 females, resulting in a total of 200 individuals. Additionally, another 200 participants from various non-university categories, again evenly split between 100 males and 100 females, contribute to the overall sample size. This balanced approach ensures a diverse representation across genders and categories within the study, fostering a comprehensive exploration of the research objectives.

**Table 1**  
**Distribution of Participants by Gender and Category**

Category	Male	Female	Total
University	100	100	200
Others	100	100	200

Source: Field Survey.

#### 6. Results and Discussion

This section an attempt has been made to analyze the core objectives of the present study.

##### 6.1 Motor Ability across Personality Dimensions: Implications for Tailored Skill Development

Table 2 presents a detailed analysis of motor ability across three distinct personality dimensions: Psychoticism, Neuroticism, and Extraversion. The table includes mean values, standard deviations, and t-values for five key parameters—Speed, Agility, Endurance, Strength, and Flexibility—among university students, with a sample size of 400. In the Psychoticism dimension, mean values suggest relatively comparable motor abilities, while t-values indicate only slight differences, with significant variations found in Speed and

Endurance. Neuroticism, on the other hand, exhibits higher mean values for Speed, Agility, and Endurance, with notably high t-values signaling significant differences compared to Psychoticism. The asterisk denotes statistical significance at the 0.01 level, emphasizing the robustness of these distinctions. Extraversion stands out with a unique motor ability profile, displaying significantly higher performance across all parameters compared to both Psychoticism and Neuroticism, as indicated by high t-values and significance markers at the 0.01 level. These findings imply that personality dimensions, particularly Neuroticism and Extraversion, may play a role in shaping individuals' motor abilities, offering valuable insights for tailored motor skill development programs.

**Table 2**  
**Motor Ability across Personality Dimensions**

Personality		Speed	Agility	Endurance	Strength	Flexibility
Psychoticism (129)	M	11.31	13.15	2303.30	7.65	3.25
	SD	2.02	2.08	271.41	3.12	1.82
	t-value	1.160	0.26	1.57	1.43	1.38
Neuroticism (121)	M	11.02	13.08	2359.4	7.09	4.18
	SD	1.92	2.1	281.25	3.00	1.92
	t-value	4.28	7.53	2.75	7.97	6.27
Extraversion (150)	M	10.12	11.12	2447.9	10.12	5.69
	SD	1.45	1.93	211.2	2.92	1.88
	t-value	5.40	12.15	4.61	6.33	8.01

\*\* Significant at 0.01 level

Source: Field Survey.

### **6.2. Anthropometric Variations across Personality Dimensions: Insights for Tailored Interventions and Training Approaches**

Table 3 presents a thorough descriptive analysis of anthropometric measurements across three distinct personality dimensions: Psychoticism, Neuroticism, and Extraversion. The table encapsulates mean values and standard deviations for key body metrics, including Height, Weight, Chest Girth, Upper Arm Girth, and Thigh Girth, with a sample size of 400 university students. Psychoticism is associated with larger body dimensions, showcasing higher mean values in Height, Weight, Chest Girth, and Thigh Girth. In contrast, Neuroticism displays slightly smaller mean values across most measurements. Extraversion falls between these extremes, exhibiting moderate anthropometric values. Significantly, the presented t-values highlight noteworthy differences between personality dimensions, suggesting potential

correlations between an individual's personality traits and their body morphology. These findings underscore the importance of considering psychological dimensions in tailoring approaches to physical training or interventions targeting body image, contributing valuable insights to the intricate interplay between personality and physical characteristics.

**Table 3**  
**Anthropometric Measurements across Personality Dimensions**

Personality		Height	Weight	Chest Girth	Upper Arm Girth	Thigh Girth
Psychoticism (129)	M	176.43	69.3	81.90	21.59	41.24
	SD	1.70	4.62	1.37	1.05	1.94
Neuroticism (121)	M	172.86	66.83	81.52	22.13	39.12
	SD	2.61	1.19	1.16	1.09	4.23
Extraversion (150)	M	172.69	66.83	82.85	24.84	44.4
	SD	3.65	1.19	2.35	2.86	1.28
Psychoticism VS Neuroticism	t-value	3.631	2.63	1.32	2.53	4.22
Psychoticism Vs Extraversion	t-value	3.028	1.544	1.83	3.23	3.28
Neuroticism Vs Extraversion	t-value	1.25	1.28	1.12	2.38	0.56

\*\* Significant at 0.01 level

Source: Field Survey.

## 7. Conclusion and Policy Suggestions

In conclusion, this study aimed to unravel the intricate relationships between personality dimensions, motor skills, and anthropometric measurements among university students, encompassing both athletes and non-athletes. The exploration of these dimensions revealed significant findings that contribute to our understanding of the multifaceted dynamics shaping human performance. The analysis of motor ability across personality dimensions highlighted noteworthy distinctions. Neuroticism and Extraversion demonstrated significant correlations with superior motor performance, showcasing heightened speed, agility, endurance, strength, and flexibility compared to Psychoticism. These findings underscore the potential influence of personality traits on physical capabilities, presenting opportunities for tailored skill development programs. Anthropometric variations across personality dimensions provided insights into the complex interplay between psychological traits and body morphology. Psychoticism exhibited larger body dimensions, while Neuroticism displayed slightly smaller

measurements. Extraversion fell in between, presenting moderate anthropometric values. These distinctions emphasize the importance of considering personality traits in designing interventions or training approaches targeting body image and physical fitness.

In light of the comprehensive analysis examining the intricate relationships between personality dimensions, motor skills, and anthropometric measurements among university students, the following policy recommendations have been made. Firstly, the establishment of Integrated Personality-Centric Training Programs is proposed, which would tailor training regimes to align with individual personality traits. This holistic approach aims to optimize both motor skill development and anthropometric outcomes, acknowledging the diverse needs associated with different personality dimensions. Secondly, the integration of Psychosocial Support in Athletic Programs is suggested, ensuring that athletes receive guidance in understanding and leveraging their personality traits for enhanced motivation and resilience. This policy emphasizes mental well-being as a crucial component of athletic success. Lastly, the implementation of Personalized Health and Fitness Initiatives is recommended to cater to both athletes and non-athletes, leveraging insights from anthropometric and motor skill analyses. Tailored fitness plans, nutritional guidance, and mental health resources can collectively contribute to a more individualized and inclusive approach to overall well-being within university settings. These policy recommendations aim to bridge the gap between psychological and physical aspects of performance, fostering an environment that recognizes and utilizes the diverse characteristics inherent in individuals for improved athletic performance and overall well-being.

## References

Ali Zafar & Sharma, Y. P. (2009): A Comparative Study of Anthropometric Variables between Medalist and Non-medalist Football Players, *Journal of Health and Fitness*, 1(1), 58–62.

Arvind C. Rami & Sh. Neeraj Silawat (2009): A Study of the Psychological Factors, Anthropometric Measurement, and Physical Fitness of Selected University Players in Gujarat, *Shodha, Samiksha aur Mulyankan* (International Research Journal), 1(6).

Barrow, H. M. (1954) : Tests of Motor Ability for College Men, *Research Quarterly*, 25(3), 253–260.

Barry L. Johnson, Jack K. Nelson (2016): Physical Measurement for Evaluation in Physical Education, *Shabu Shan UGC (Emmes Publication)*, p. 46.

\*\*\*\*\*