

Internal Assessment - Sports, Exercise  
and Health Science:

Hypothesis:

Is there a dominant personality trait for individual non contact sport participants such as gymnastics, swimming and dance?

Draft

**Table 1.1 - Own data table to show the results from the ten item personality inventory (TIPI) questionnaire from gymnastics (individual non - contact) sport performers, showing their dominant trait(s) from the Big 5 Key personality traits.**

Sport:	Participant:	Dominant Trait(s):	No. Of dominant traits:
Gymnastics	1	Agreeableness, Openness to Experiences	2
	2	Openness to new experiences	1
	3	Openness to new experiences	1
	4	Emotional Stability	1
	5	Emotional Stability	1
	6	Conscientiousness	1
	7	Conscientiousness, Extraversion	2
	8	Conscientiousness	1

**Table 1.2 - to show qualitative data of my own participants:**

Sport:	Participant:	Qualitative Data:
Gymnastics:	1	14 years old Female, Level 6 WAG (Women's Artistic Gymnastics), Trains 10.5 hours a week
	2	15 years old Female, Level 6 WAG Trains 14 hours a week
	3	13 years old Female, Level 5 WAG
	4	14 years old Female, Level 5 WAG
	5	Female, Level 6 WAG, Lives in Bangkok
	6	14 years old Female, Level 5 WAG
	7	Female & lives in the UK
	8	Female

**Table 1.3 – Group data showing the results from the ten item personality inventory (TIPI) questionnaire from individual non – contact sport performers, showing their dominant trait(s) from the Big 5 Key personality traits.**

Sport:	Participant:	Dominant Trait(s):	Number of dominant traits:
Gymnastics:	1	Agreeableness, Openness to Experiences	2
	2	Openness to new experiences	1
	3	Openness to new experiences	1
	4	Emotional Stability	1
	5	Emotional Stability	1
	6	Conscientiousness	1
	7	Conscientiousness Extraversion	2
	8	Conscientiousness	1
Dance:	1	Openness to experiences	1
	2	Agreeableness	1
	3	Extraversion and Conscientiousness	2
	4	Openness to experiences	1
	5	Conscientiousness	1
	6	Agreeableness	1
	7	Agreeableness Openness to experiences Extraversion	3
	8	Emotional Stability	1

Blue font is my own data

Table 1.3 cont....

Sport:	Participant:	Dominant Trait(s):	Number of dominant traits:
Swimming:	1	Emotional Stability	1
	2	Extraversion	1
	3	Agreeableness	1
	4	Extraversion Conscientiousness Emotional Stability	3
	5	Extraversion	1
	6	Agreeableness Conscientiousness	2
	7	Openness to experiences	1
	8	Extraversion	1

Table 1.4 - to show qualitative data of group participants as well as my own:

Sport:	Participant:	Qualitative Data:
Gymnastics:	1	14 years old female Level 6 WAG (Women's Artistic Gymnastics) Trains 10.5 hours a week
	2	15 years old female Level 6 WAG, trains 14 hours a week
	3	13 years old female Level 5 WAG
	4	14 years old female Level 5 WAG
	5	Female, Lives in Bangkok Level 6 WAG
	6	14 years old female Level 5 WAG
	7	Female, lives in the UK
	8	Female

Table 1.4 cont...

Sport:	Participant:	Qualitative Data:
Dance:	1	15 years old female Trains 5 times a week
	2	16 years old female
	3	14 years old female
	4	12 years old female
	5	16 years old female Trains 5 times a week
	6	15 years old female
	7	13 years old female
	8	14 years old female
Swimming:	1	15 years old male, Swimming for 4 years
	2	15 years old female Swimming for 6 years
	3	Swimming for 5 years 16 years old 15 female
	4	Swimming for 3 years 17 years old male
	5	Swimming for 8 years 15 years old female
	6	Swimming for 2 years 16 years old male
	7	Swimming for 7 years 17 years old male
	8	Swimming for 4 years 14 years old female

Blue font represents my own data

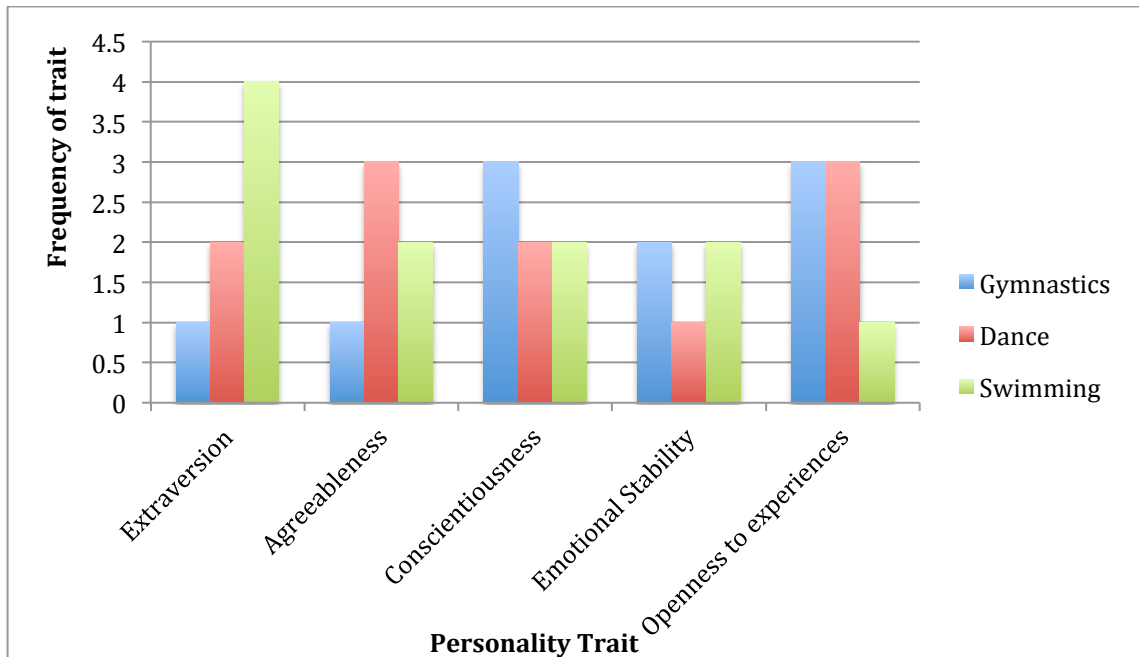
**Table 1.4 – Group processed data to show the most common traits found in individual non-contact sports:**

Trait:	Gymnastics:	Dance:	Swimming:	Total:
Extraversion	1	2	4	7
Agreeableness	1	3	2	6
Conscientiousness	3	2	2	7
Emotional Stability	2	1	2	5
Openness to experiences	3	3	1	7

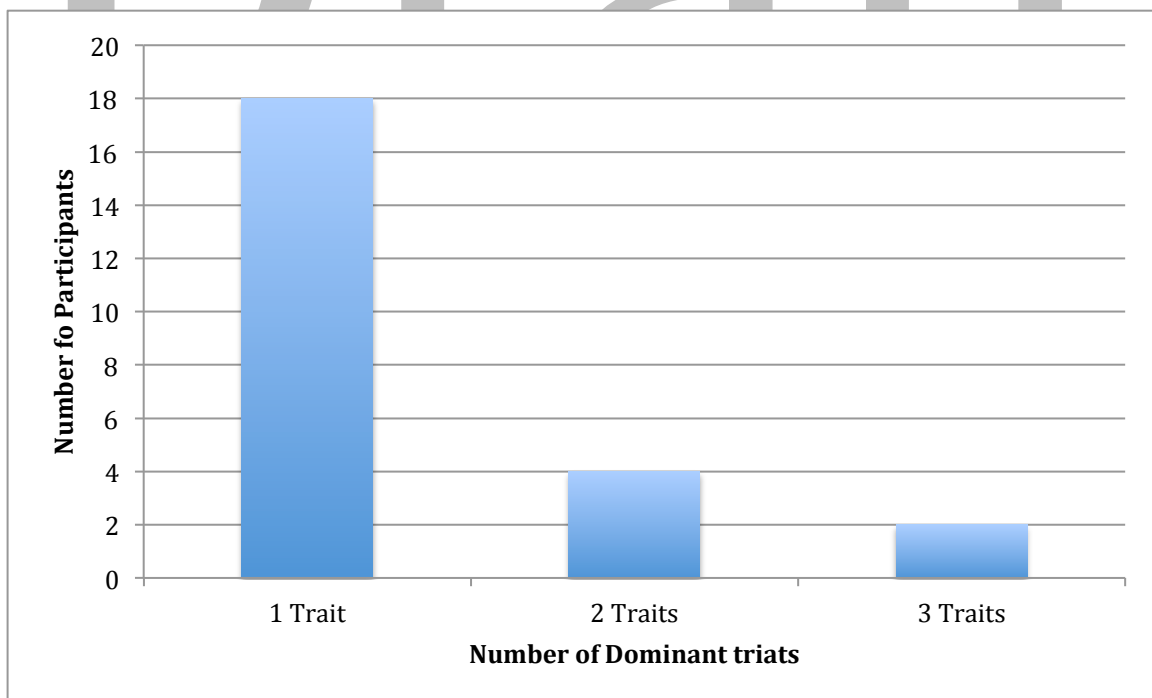
**Table 1.5 – Group processed data to show the number of dominant key personality traits in individual non-contact sports:**

Number of dominant traits:	Gymnastics: (8 total)	Dance: (8 total)	Swimming: (8 total)	Total: (24 total)
3	0	1	1	2
2	2	1	1	4
1	6	6	6	18

**Graph 1.1 - to show the frequency of the Big 5 key personality traits in each of the three individual non- contact sports:**



**Graph 1.2 - to show the number of dominant key personality traits amongst the three individual non-contact sports:**



### **Conclusion:**

In answering the question “Is there a dominant personality trait for individual non-contact sport participants?” It has been shown that there are many common personality traits amongst individual non contact sports players but there is no dominant personality trait. Gross in 1992, defined personality as “those relatively stable and enduring aspects of individuals which distinguish them from other people, making them unique but at the same time permit a comparison between individuals”. Graph 1.2 clearly proves that only 18 out of 24 participants have one dominant trait, whilst 6 out of 24 participants have two or more dominant traits. This reiterates our point, that there is no dominant trait within individual non contact sport players. 2 gymnasts had two dominant traits, and 1 participant from swimming and dance had 2 dominant traits. Only 1 participant from both swimming and dance had 3 dominant traits.

When looking at the results for a gymnast, we can clearly see from graph 1.1 that the most dominant trait in gymnastics is conscientiousness and openness to new experiences. Three people received conscientiousness and three people received openness to new experiences, whilst only 1 person got extraversion and another got agreeableness, making these the least important personality trait in gymnastics.

The dance participants had one common personality trait with the gymnasts. It was openness to new experiences. The second dominant personality trait in dancers was agreeableness, which happened to be gymnast’s lowest personality trait. The lowest scoring personality trait for dancers was emotional stability, which was shown in graph 1.1 to be predominately lower than what swimmers and gymnasts received for emotional stability.

The swimming participants only had one dominant personality trait, compared to gymnasts and dancers, which graph 1.1 proved to have 2 dominant traits each. Swimming’s most dominant personality trait was extraversion, which was the lowest personality trait in gymnasts. Swimming’s lowest personality trait was openness to experiences, which was what dancers and gymnasts scored highly on.

There is a lack of agreement on whether personality is related to an athlete’s performance. Many believe that some sports require certain personalities, yet there is no recent research that supports this. Other research suggests that there is no single personality trait that distinguishes different types of sport players, and there isn’t a personality trait that even separates athletes to non-athletes.

The personality trait, conscientiousness, was found to be common in swimmers and gymnasts but even more common in dancers. This could be because conscientiousness is the personality trait, which implies a well-organized, efficient and hard working individual. This trait would be found in individual non-contact sports especially in Gymnastics, Dance and Swimming as these three sports are some of the hardest sports in the world. They are also sports that require long amount of training sessions, again supporting the idea that the participants of these sports would have to be conscientious, to be hardworking and organized.



Allen et al in 2013 suggested that athletes that compete at international levels are likely to show higher levels of conscientiousness. Allen et al, also found that a group of British Gymnasts demonstrated higher conscientiousness levels due to having a good quality preparation to the lead up to a competition.

Other psychologists have found that team players tend to be more dependent and extroverted compared to individual sport players. This is shown through our results as both gymnasts and dancers scored quite low for extraversion as a trait in their personality.

In order to collect all our results, we had eight participants from the three sports (gymnastics, dancers, and swimmers) to fill out the TIPI (Ten Item Personality Inventory). We wanted to see if there was a dominant trait throughout participants in these non-contact individual sports. An advantage of the TIPI questionnaire is that it is very quick and easy for our participants to complete. It also provides clear results in a graph for us to see. It is crucial that all the same questions were asked to all the participants to make it a fair test and to make sure that the results we receive are accurate. A questionnaire is also very easy to control the conditions, as each participant is asked the same question, in the same way, although different participants can misinterpret the questions. A different method to avoid this issue would be an observational data collection. This requires a trained observer to come and watch the participants play their sport whilst noting down any information about their behaviour. This method is very time consuming and can have observer bias. A final data collection method could be a physiological approach, requiring the participants to wear a wire whilst participating in their sport. This can cause extra stress for the participants but does give far more accurate results as the wire gives fairly accurate data.

In conclusion, we have found that although there are common personality traits throughout non-contact individual sport performers, there is no dominant personality trait that differentiates sport performers.

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## Evaluation:

### **Weakness 1: Ten Item Personality Inventory (TIPI)**

The TIPI questionnaire only had 10 questions and was conducted only once.

#### **Significance of Error:**

The significance of this error was high, as the participants only conducted it once, disallowing the results to be double-checked for any misinterpretations of questions or any errors in results. The test could be said to lack reliability, as it was only taken once, but also because results to questionnaires can be inconsistent due to the mood of the participant or the time given for the questionnaire to be completed.

#### **Suggested Improvement:**

The TIPI questionnaire could have been taken three times over the course of a week to the same participants, to ensure reliability of the results. Another type of personality test may have been better to analyze personality such as the Myers- Briggs test. The Myers-Briggs type indicator put people into 16 different types on the basis of four categories: introversion-extroversion, sensing – intuition, thinking-feeling and judging-perceiving. Although it is more time consuming it is a very commonly used and popular psychology personality testing system.

### **Weakness 2: Questionnaire – Data Collection Method**

The questionnaire required our participants to assess themselves on their own personality and this can lead to errors in results due to bias issues or to self presentation in a way where are participants are too modest and downplay themselves.

#### **Significance of Error:**

This error has a high significance, as the data is reliant on self-assessment. A common issue with questionnaires as a method of testing is that the participants can change their answers depending on their moods or even answer what they think to be a socially acceptable answer.

#### **Suggested Improvement:**

A better way to gain personality data of sport participants is through interviews in a sporting environment or through an observational approach. This approach would take a lot longer and can lead to observation bias. The observers would also have to be trained and have experience in interpreting data. Whilst another approach would be connecting sport performers to heart rate monitors and seeing how they react to stressful events. Although, this method also has disadvantages as the wires and monitors can cause stress themselves.

**Weakness 3: Limitation of only three sports**

The test only focused on three individual non-contact sports: Gymnastics, dance & swimming

**Significance of Error:**

Significance of this error is low, although to gather more data, a comparison between five individual non-contact sports could have helped the accuracy of our results.

**Suggested Improvement:**

Next time we could collect more data from other individual non-contact sport teams such as; diving, horse riding and go karting, to have a greater comparison. We also could have included 10 participants from each sport instead of 8 to gain more accurate results.

**Weakness 4: Variety of performance levels**

Participants of the experiment are at a different level of performance for their sport: associative or autonomous phase of learning

**Significance of Error:**

The significance of this error is low, but it can affect the data being collected, as some participants may be a beginner whilst others may be of an elite level. Participant 1 from gymnastics has competed internationally whilst participant 6 from gymnastics has only competed in Singapore. This could effect the results and explain why participant 1 has 2 dominant traits one being openness to experiences. Deaner and Silva, 2002 explain that as sport performers strive to become elite level, only those athletes with appropriate psychological attributes succeed because of their personality traits.

**Suggested Improvement:**

Only select elite performers who represent their state or perform internationally. We would focus primarily on the top end of athletes in each sport.

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**Appendix:**

Image 1: TIPI visual and raw data score for participant 1 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 4.50		
Agreeableness: 5.50		
Conscientiousness: 4.50		
Emotional Stability: 4.50		
Openness to Experiences: 5.50		

Image 2: TIPI visual and raw data score for participant 2 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 6.00		
Agreeableness: 3.00		
Conscientiousness: 5.00		
Emotional Stability: 4.50		
Openness to Experiences: 7.00		

Image 3: TIPI visual and raw data score for participant 3 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 4.50		
Agreeableness: 3.50		
Conscientiousness: 4.50		
Emotional Stability: 4.00		
Openness to Experiences: 6.00		

Image 4: TIPI visual and raw data score for participant 4 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.50		
Agreeableness: 4.50		
Conscientiousness: 4.00		
Emotional Stability: 6.50		
Openness to Experiences: 4.50		

Image 5: TIPI visual and raw data score for participant 5 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 4.00		
Agreeableness: 3.00		
Conscientiousness: 5.50		
Emotional Stability: 6.50		
Openness to Experiences: 4.50		

Image 6: TIPI visual and raw data score for participant 6 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 4.50		
Agreeableness: 5.00		
Conscientiousness: 6.00		
Emotional Stability: 4.50		
Openness to Experiences: 5.50		

Image 7: TIPI visual and raw data score for participant 7 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 6.50		
Agreeableness: 4.00		
Conscientiousness: 6.50		
Emotional Stability: 5.50		
Openness to Experiences: 6.00		

Image 8: TIPI visual and raw data score for participant 8 in gymnastics

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.50		
Agreeableness: 4.00		
Conscientiousness: 6.00		
Emotional Stability: 3.50		
Openness to Experiences: 5.00		

Image 9: TIPI visual and raw data score for participant 1 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.50		
Agreeableness: 4.00		
Conscientiousness: 4.50		
Emotional Stability: 4.50		
Openness to Experiences: 6.00		

Image 10: TIPI visual and raw data score for participant 2 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 3.00		
Agreeableness: 6.00		
Conscientiousness: 3.50		
Emotional Stability: 3.50		
Openness to Experiences: 4.50		

Image 11: TIPI visual and raw data score for participant 3 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.50		
Agreeableness: 3.50		
Conscientiousness: 5.50		
Emotional Stability: 2.50		
Openness to Experiences: 5.00		

Image 12: TIPI visual and raw data score for participant 4 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 6.00		
Agreeableness: 5.50		
Conscientiousness: 3.00		
Emotional Stability: 4.50		
Openness to Experiences: 6.50		

Image 13: TIPI visual and raw data score for participant 5 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 3.50		
Agreeableness: 5.00		
Conscientiousness: 5.50		
Emotional Stability: 4.00		
Openness to Experiences: 4.50		

Image 14: TIPI visual and raw data score for participant 6 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 3.00		
Agreeableness: 6.00		
Conscientiousness: 3.50		
Emotional Stability: 3.50		
Openness to Experiences: 4.50		

Image 15: TIPI visual and raw data score for participant 7 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 6.00		
Agreeableness: 6.00		
Conscientiousness: 5.00		
Emotional Stability: 4.50		
Openness to Experiences: 6.00		

Image 16: TIPI visual and raw data score for participant 8 in dance

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.00		
Agreeableness: 2.50		
Conscientiousness: 2.00		
Emotional Stability: 6.50		
Openness to Experiences: 5.50		

Image 17: TIPI visual and raw data score for participant 1 in swimming

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 4.00		
Agreeableness: 3.50		
Conscientiousness: 2.50		
Emotional Stability: 5.50		
Openness to Experiences: 3.50		

Image 18: TIPI visual and raw data score for participant 2 in swimming

Personality Trait	Opposite Strength	Similar Strength
Extraversion: 5.00		
Agreeableness: 4.50		
Conscientiousness: 2.00		
Emotional Stability: 4.00		
Openness to Experiences: 4.00		

Image 19: TIPI visual and raw data score for participant 3 in swimming

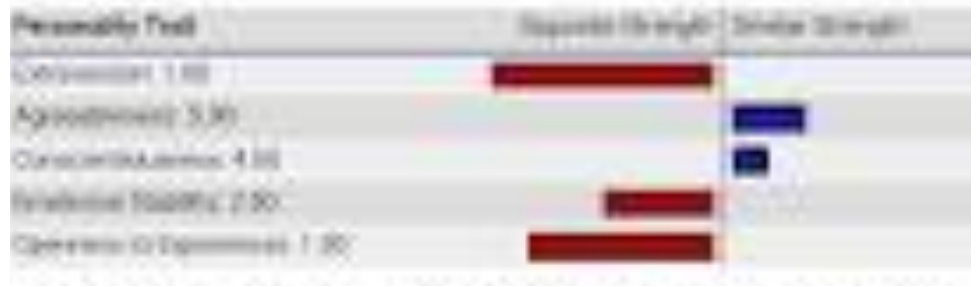


Image 20: TIPI visual and raw data score for participant 4 in swimming



Image 21: TIPI visual and raw data score for participant 5 in swimming



Image 22: TIPI visual and raw data score for participant 6 in swimming

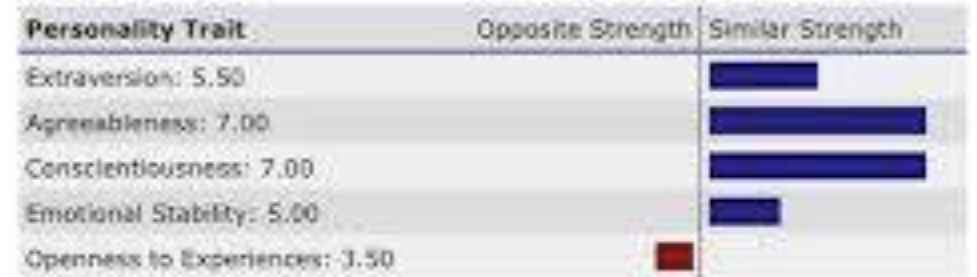


Image 23: TIPI visual and raw data score for participant 7 in swimming

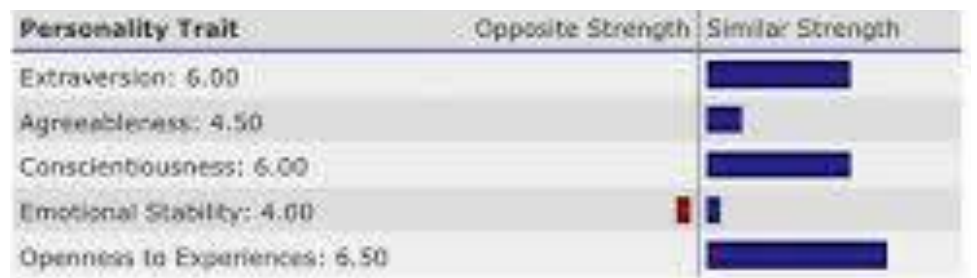


Image 24: TIPI visual and raw data score for participant 8 in swimming

