



## Passion, grit and mindset in football players

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### ABSTRACT

The main aim of the study was to explore the relationship between passion, grit and mindset in a group of football players in Norway. The sample had 63 participants. In three different groups in relation to age and level. Sogndal elite team (N = 25) (Elite), Sogndal Junior team (N = 17) (Junior 18) and young talents in Sogn-og Fjordane (N = 21) (Junior 15).

To assess the level of passion the passion scale was used, an eight-item scale. To measure grit the Grit-S scale was used. The scale has 8 items. Mindset was measured with the Theories of Intelligence Scale (TIS). The scale has 8-items. Trainers in each group ranked the players football competence. The results show that the elite team did have the highest score in all factors. Significant difference between elite and Junior 15 in the factor grit. The results indicate significant correlations between the variables; passion-grit ( $r = 0.576$ ,  $p < .001$ ) and grit-mindset ( $r = 0.271$ ,  $p < .05$ ). The correlation was not significant for passion-mindset ( $r = 0.121$ ). Elite: a significant correlation for the variables passion-grit ( $r = 0.474$ ,  $p < .001$ ) only. The correlation passion-mindset ( $r = 0.049$ ); grit-mindset ( $r = 0.215$ ) and trainers ranking was not significant. However, it is interesting to note the moderate correlation between passion and trainers ranking ( $r = -0.326$ ) and grit and trainers ranking ( $r = -0.268$ ) in this group. Junior 18: a significant correlation for the variables passion-grit ( $r = 0.679$ ,  $p < .001$ ) only. The correlation between passion-mindset ( $r = 0.146$ ); grit-mindset ( $r = 0.381$ ) and trainers ranking was not significant. Junior 15: the results indicate a significant correlation for the variables passion-grit ( $r = 0.665$ ,  $p < .001$ ) and passion-trainers ranking ( $r = -0.545$ ,  $p < .05$ ; large correlation) only. The correlation between passion-mindset ( $r = 0.181$ ); and grit-mindset ( $r = 0.227$ ) was not significant. In sum, despite associations magnitudes between variables (grit, mindset, and passion) are different among groups, only significant differences between groups were found in grit.

### 1. Introduction

To become excellent in different area/theme/skill there are many factors of great importance. Ericsson, Prietula, and Cokely (2007) have argued that deliberate practice and good mentor is two of these factors. Growth mindset which is considered to be a very important way of thinking to become successful (Yeager et al., 2019) i.e. 'I can develop my skill or knowledge if I work hard'. Duckworth (2016) have argued that the concept of grit should also be considered as an important part of the excellent 'puzzle' i.e. to be able to work hard over a long period is something that make you a winner. Researcher have also point to the significance of passion in this respect (Vallerand, 2010). Sigmundsson, Haga, and Hermundsdottir (2020a) in their 'To become experts' model

have integrated all these five factors together as a key trait to understand this picture. They argue that passion may set the direction for what you want to develop and use your energy in.

### 2. Football

Football is one of the most popular sports in the World and the largest sport in most countries and the sport has been reflected as a way in to further social and personal development (Forde & Kota, 2016). To become an elite performer in the area of football, players need to become and be characterized by exceptional skill and abilities and be highly dedicated by investing an extensive amount of time of practice in order to improve tactical knowledge and physiological status to achieve

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their goals (Sarmiento, Anguera, Pereira, & Araujo, 2018). The skilled player at an elite level needs high technical abilities and tactical knowledge, top physical fitness, perceptual-cognitive expertise and last but not least personal characteristics (Larkin, O'Connor, & Williams, 2016). The sport is in need of fulfilling a motivational climate that expects full attention and focus even at more moderate level of play (Zourbanos et al., 2016). Even so, motivational climate has been described as either mastery or ego achievement approaches (Smith, Smoll, & Cumming, 2007). Moles, Auerbach, and Petrie (2017) studied grit in 71 young soccer players. The researchers found that the students performed better receiving mastery involving feedback rather than the Ego-involving feedback. They found grit to be a significant mediator of a feedback-shooting performance relationship especially for students in the low-grit domain.

The coaches, parents and teammates emerge as social agents whose behaviour will be crucial for athletes' emotional status and positive and negative affective consequences and who influence their motivational processes. Ommundsen and Vaglum (1991) found through a multi regression analyses among 223 soccer playing boys (12–16 yrs) that low soccer related personal characteristics as self-esteem was related to soccer competition anxiety, but for high perceived soccer competence and parents' and coaches, positive involvement was predictive of passion or in this case enjoyment in soccer.

In order to achieve autonomy, relatedness and competence (Deci & Ryan, 2010), it is our opinion that it is best achieved in combination of a growth mindset with grit and passion (Duckworth 2016; Dweck, 2012).

### 3. Passion

Passion is defined as a strong desire or enthusiasm for something (Oxford University Press, 2019), or a strong feeling toward a very important value/preference that motivates intentions and behaviors to express that value/preference (Jachimowics et al., 2018). Passion is possibly one explanation for why some individuals offer much time, effort and hard work towards achievement in an area/theme/skill (Sigmundsson et al., 2020a). Research indicate that male have a higher score than females in passion at the same time they have much higher relationship between passion and grit than females (Sigmundsson, Haga, & Hermundsdottir, 2020b). Bonneville-Roussy, Lavigne, and Vallerand (2011) argue that passion may be considered as domain-specific, that is, one can have passion for work or hobbies.

### 4. Grit

The term grit is defined as endurance and passion for long-term goals. Grit is characterized by exertion or diligence and contributes to the maintenance of effort and interest despite the failure of progress (Duckworth, 2016). Several psychologists have questioned the intellect, and proposed perseverance and persistence for being as important (Duckworth, Peterson, Matthews, & Kelly, 2007). Schmidt, Nagy, Fleckenstein, Möller, and Retelsdorf (2018) argue that grit can be integrated into the hierarchical structure of the property conscientiousness (Big 5) because of the high correlation between grit and self-discipline ( $r = 0.92$ ).

### 5. Mindset

Mindsets is a set of beliefs in our own attributes (Dweck, 2012). Thus, mindsets can be understood as people's beliefs about the nature of human attributes, such as intelligence or personality (Dweck, 2012, p. 615). Some people have a fixed mindset and believe that human attributes are fixed and permanent qualities and other people have a growth mindset and believe that all people can become significantly more intelligent through effort, practice and education.

Furthermore, research has shown that people with growth mindset tend to face challenges as an opportunity for learning, while people with

a fixed mindset tends to avoid challenges.

The main purpose of the article was:

- to explore possible difference between three group of football players; Sogndal elite, Sogndal junior and Sogn - og Fjordane county team; in passion, grit and mindset
- to explore the associations between passion, grit and mindset for group as a whole and for each of the three groups

## 6. Method

63 subjects participated in the study. The participants was in three groups; Sogndal Football elite (Elite), mean age 22.32 (SD 4.86); Sogndal football Junior (Junior 18) mean age 17.82 (SD 2.35) and Sogn og Fjordane County team (Junior 15) mean age 14.85 (SD 0.35). The information registered about the participants were anonymous (age and gender). Recruitment was conducted among professional and semi-professional football players in the county of Vestland (Sogn og Fjordane). The elite team played qualification for Norwegian premier league (eliteserien) the Junior 18 played in European league after becoming Nordic junior champions. The county team Junior 15 are at top national standard. The participants were tested on passion scale, grit scale and mindset scale. In addition trainers in each group ranked the players football competence.

## 7. Measurements

### 7.1. Demographics

Participants indicated their age, gender and educational level.

### 7.2. Passion

The Passion scale was used to assess participant's level of passion. The participants rated eight items, using the scale of 1 = not like me at all to 5 = very much like me. The 5-point Likert scale is one of the most common (Likert, 1932) and was used for possible comparison to other important factors related to passion. For the overview of the 8-items see Table 1. The maximum score on this scale is 5 (extremely passionate) and the lowest is 1 (not at all passionate). Passion showed good internal consistency Cronbach's alpha value  $\alpha = 0.86$ . Passion showed also a good test-retest reliability. ICCs between test and retest total scores were .92 ( $N = 21$ , mean age 23.67,  $SD = 2.41$ ). Construct validity: Pearson correlation coefficient between total score Passion and Grit S Scale were. 39 for adults, mean age 21.23 ( $SD = 3.45$ ) ( $N = 107$ ) (Sigmundsson et al., 2020a).

### 7.3. Grit

Duckworth et al. (2007) defined grit as perseverance and passion for long-term goals (p. 1087). Grit S; short grit scale (Duckworth & Quinn, 2009; Norwegian version, Sending, 2014) was used to assess participant's level of grit. Participants rated eight items, using a 5-point Likert scale with items rated in terms of how much the item is "true" for the respondent (1 = not like me at all and 5 = very much like me). The

**Table 1**

The eight questions in the Passion scale.

- |   |
|---|
| 1. I have an area/theme/skill I am really passionate for                      |
| 2. I would like to use much time to become good in that area/theme/skill      |
| 3. I think I could be an expert in one area/theme/skill                       |
| 4. I have a passion enough to become very good in the area/theme/skill I like |
| 5. I work hard enough to fulfill my goals                                     |
| 6. I have burning passion for some areas/theme/skills                         |
| 7. I use lot of time on the projects I like                                   |
| 8. My passion is important for me   |

measure includes two subscales of four items each; Consistency of Interest (COI) and Perseverance of Effort (POE). A sample item for COI is ‘I often set a goal but later choose to pursue a different one’ (reverse-scored) and for POE is ‘I finish whatever I begin’. The maximum score on this scale is 5 (extremely gritty), and the lowest score is 1 (not at all gritty). Grit-S showed good internal consistency several times,  $\alpha = 0.82$  and  $\alpha = 0.84$  (Duckworth & Quinn, 2009, p. 170). The study provided evidence for the predictive validity, consensual validity, and test-retest stability of the Grit-S.

7.4. Mindset

A Norwegian version of Dwecks (1999) Theories of intelligence scale (TIS) was used to assess students’ entity and incremental conceptions of intelligence (Norwegian version Bråten & Strømso, 2004). The self-form for adults of this measure was used to ensure that the students focused on their ideas about their own intelligence (and not their ideas about people in general). This scale consists of several subscales with items rated on a 6-point Likert-type scale, from 1 (Strongly Agree) to 6 (Strongly Disagree). The 8-item ITIS are the most commonly used in the research literature concerning mindset. The items included differ between those associated with an entity theory (i.e., fixed mindset) and those associated with an incremental theory (i.e., growth mindset). For instance, an entity theory item can be “You have a certain amount of intelligence and you really can’t do much to change it”, whereas an incremental theory item can be “You can always substantially change how intelligent you are”. To get a meaningful score that indicates which mindset the participant holds, the incremental scale items are reversed. As a result, when all items are summed, the higher average scores indicate a greater amount of incremental beliefs about intelligence i.e. growth mindset. The reliability data for the scale comes from Dweck, Chiu, and Hong (1995) and is based on the 8-item scale. The scale shows good internal consistency ( $\alpha = 0.85$ ) and test-retest reliability at 2-weeks ( $r = 0.80$ ). The scale also shows a good construct validity with scores predicting meaningful relationship with several variables (Dweck et al., 1995). The Norwegian version of TIS has also shown to be reliable, with Cronbach’s  $\alpha = 0.86$  for entity items and  $\alpha = 0.88$  for the incremental items (Bråten & Strømso, 2004).

7.5. Data reduction and analysis

For the statistical analysis, SPSS Version 25 for Windows was used (SPSS Inc., Chicago, IL, USA). Statistical significance was set at  $p < .05$ . The standardized effects size of Cohen was calculated to pairwise comparisons after the Mann-Whitney test. The magnitude of effect size was determined following the thresholds: 0.0–0.2, trivial; 0.2–0.6, small; 0.6–1.2, moderate; >1.2, large. The correlation magnitudes were inferred in accordance with the following thresholds: 0.0–0.1, trivial; 0.1–0.3, small; 0.3–0.5, moderate; 0.5–0.7, large; 0.7–0.9, very large; and >0.9, nearly perfect.

8. Results

8.1. Demographic differences

As a first step, we explored demographic differences among variables of interest.

For the group as whole age had no significant correlation with mean total score passion ( $r = -0.051$ ), grit ( $r = 0.120$ ) and mindset ( $r = 0.159$ ).

Table 2 shows the mean and standard deviation of the scores for the group as a whole; the Elite team, junior 18 and junior 15.

The results indicate highest score for the elite team in all three variables. However, the only significant difference was found between the elite team and junior 15 in grit ( $p = .0035$ , Mann-Whitney  $U$  test;  $d = 0.443$ , small effect size).

Table 2

Mean and standard deviations for passion, grit and mindset for the group as a whole; the Elite team, junior 18 and junior 15 (N = 63).

	Group as whole (N = 63)	Elite (N = 25)	Junior 18 (N = 17)	Junior 15 (N = 21)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Passion	4.62 (.354)	4.64 (.395)	4.58 (.366)	4.64 (.304)
Grit	3.87 (.485)	3.99 (.468)	3.81 (.508)	3.78 (.482)
Mindset	4.48 (.938)	4.58 (.954)	4.26 (0.922)	4.54 (.947)

8.2. Correlational analyses

To explore the associations between the variables of interest we conducted correlational analyses for the group as a whole. See Table 3 for detail. The results indicate significant correlations between the variables; passion-grit ( $r = 0.576$ ,  $p < .001$ ; large correlation) and grit-mindset ( $r = 0.271$ ,  $p < .05$ ; small correlation). The correlation was not significant for passion-mindset ( $r = 0.121$ ; small correlation). Fig. 1 show the results of the correlation between the variables for Elite, Junior 18, and Junior 15 respectively.

Elite: the results indicate a significant correlation for the variables passion-grit ( $r = 0.474$ ,  $p < .001$ ; moderate correlation). The correlation between passion-mindset ( $r = 0.049$ ; trivial correlation); grit-mindset ( $r = 0.215$ ; small correlation) and trainers ranking was not significant. However, it is interesting to note the moderate correlation between passion and trainers ranking ( $r = -0.326$ ; moderate correlation) and grit and trainers ranking ( $r = -0.268$ ; small correlation) in this group. The correlation between mindset and trainers ranking ( $r = -.092$ ; trivial correlations).

Junior 18: the results indicate a significant correlation for the variables passion-grit ( $r = 0.679$ ,  $p < .001$ ; large correlation). The correlation between passion-mindset ( $r = 0.146$ ; small correlation); passion-trainers ranking ( $r = 0.113$ ; small correlation). grit-mindset ( $r = 0.381$ ; moderate correlation); grit-trainers ranking ( $r = 0.125$ ; small correlations) and mindset-trainers ranking ( $r = 0.053$ ; trivial correlations).

Junior 15: the results indicate a significant correlation for the variables passion-grit ( $r = 0.665$ ,  $p < .001$ ; large correlation) and Passion-Trainers ranking ( $r = -0.545$ ,  $p < .05$ ; large correlation). The correlation between passion-mindset ( $r = 0.181$ ; small correlation); and grit-mindset ( $r = 0.227$ ; small correlation) was not significant. Grit – trainers ranking ( $r = -0.389$ ) and mindset-trainers ranking ( $r = -0.008$ ).

9. Discussion

The main aim of the paper was to explore Passion, Grit and Mindset in football players in different levels and age. In this round of testing reported in this study, the three scales were administered to 63 football players. 25 elite football players (mean age 22.32), 17 junior players (mean age 17.82) and young football players (mean age 14.85).

9.1. Passion

The score on the passion scale was relatively high for the three

Table 3

Intercorrelations (Pearsons) between passion, grit and mindset (growth) (N = 63).

	Passion	Grit	Mindset (growth)
Passion	1	.576 <sup>a</sup>	.121
Grit		1	.271 <sup>b</sup>
Mindset (growth)			1

<sup>a</sup> Correlation is significant at the 0.01 level (2-tailed).

<sup>b</sup> Correlation is significant at the 0.05 level (2-tailed).



Fig. 1. Correlations (mean[95%CI]) between variables considering the groups.

groups from 4.58 to 4.64. Compared with a university students (N = 146) from Iceland which had mean scores of 4.16 (SD .561) the football players had a significant higher passion score (Sigmundsson et al., 2020b). This indicates that football players both elite and junior do have a high passion for a theme/skill/area. Which are supported by researchers as Ericsson i.e. to be excellent you need a lot of passion (Ericsson & Pool, 2016).

## 9.2. Grit

The grit scale score was relatively high for the three groups from 3.78 to 3.99. The elite group had significant higher score than the junior 15. This is supported in research findings of Duckworth and Quinn (2009). They found that older adults reported higher levels of grit. This may be related to more life experience. Compared with a university students (N = 146) from Iceland which had mean scores of 3.52 (SD .565) the football players had a significant higher grit score (Sigmundsson et al., 2020b). This indicates that football players both elite and young junior do have a relative high grit. Duckworth (2016) argues for the power of grit to achieve your potential and achieve success in the area you are focused on.

## 9.3. Mindset

The football players did have score from 4.26 to 4.58 in the mindset scale. University students in Iceland had mean mindset score of 4.35 (.953). The difference between football players and university students was not significant in the scores on mindset. It is interesting to see that the difference between football players and university students are mainly regarding passion and grit. It may be argued that both groups may need growth mindset for their achievement (Dweck, 2017).

## 9.4. The relationship in the groups as a whole

The main findings of the study were a significant relationship between passion and grit ( $r = 0.576$ ) and grit and mindset ( $r = 0.271$ ). The high relationship between passion and grit is very interesting and potentially important. The university students from Iceland did have a relationship between passion and grit ( $r = 0.429$ ) and between grit and mindset ( $r = 0.250$ ). This difference is not significant. In relation to

achievement it may be argued that passion and grit are intertwined. Passion gives the direction of the arrow to the area/theme/skill you want to achieve in, while grit may be considered to control the size and strength of the arrow (Sigmundsson et al., 2020a). The moderate relationship between grit and mindset may indicate that despite of high Grit these athletes mindset varies and for footballers with low mindset they might be especially predisposed by variations in performance, as their Mindset and Grit could be influenced by wide-ranging intrinsic and extrinsic factors.

## 9.5. The relationship in the different groups

Elite group: for the elite group the most interesting findings are the significant relationship between passion and grit ( $r = 0.474$ ). It is also interesting to note the moderate relationship between the score on passion and grit with trainer rankings ( $r = -0.326$ ;  $r = -0.268$ ). This indicates that the football competence of elite players evaluated by the trainer is related to the players passion and grit.

Junior 18: for the Junior 18 group the relationship between passion and grit was very high ( $r = 0.679$ ). This may further indicate the importance of passion for being gritty (Duckworth, 2016). The relationship between grit and mindset was also quite high ( $r = 0.381$ ). This result are higher than for the elite and junior 15 groups. This group may be considered to be the most successful of this three groups, playing Champions league for Junior team. So finding high correlations should not be surprising.

Junior 15: for the Junior 15 it was high correlation between passion and grit as for the other two groups. It was also interesting to see the high relationship between trainers ranking and passion and grit ( $r = -0.545$ ;  $r = -0.389$ ). It seems that for this age group the players passion and grit is an indication for their football competence according to the trainers.

## 10. Conclusion

This study indicates firstly a very high relationship between players passion and their grit. Secondly, it is of great interest to see the quite high correlation between trainers rankings and players passion and grit for the elite team and Junior 15. The results support the model of Sigmundsson et al. (2020a) and the view of Ericsson and Pool (2016) that



key factors 'To become experts' are passion and grit.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.newideapsych.2020.100797>.

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