



The Relationship Between Mental Toughness, Goal Orientation and Motivational Climate Levels of Professional Football Players

Profesyonel Futbolcuların Zihinsel Dayanıklılık, Hedef Yönelimi ve Motivasyonel İklim Düzeyleri Arasındaki İlişkinin İncelenmesi

Research Article / Araştırma Makalesi

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Abstract

This study aims to examine the mental toughness, goal orientation and motivational climate levels of 887 professional footballers from TFF 1st League, TFF 2nd League and TFF 3rd League registered in Turkish Football Federation and whether these characteristics change according to age, league level and sport experience. The results showed that mental toughness scores of footballers were significantly correlated with age, league level and sport experience. Significant difference was found in goal orientation scores with age and league level, but not with sport experience. Motivational climate scores were found to vary significantly with age, league level and sport experience. In addition, it was found that task orientation had a positive effect on mental toughness, and mastery climate, one of the sub-dimensions of motivational climate, had a positive effect on mental toughness. However, performance climate was found to have a significant and negative effect on mental toughness. This study showed that the levels of mental toughness, goal orientation and motivational climate in professional football players have significant relationships with demographic factors and with each other.

Keywords: Professional football players, mental toughness, task orientation, ego orientation, motivational climate

Öz

Bu araştırma, Türkiye Futbol Federasyonu'na kayıtlı TFF 1. Lig, TFF 2. Lig ve TFF 3. Lig'den 887 profesyonel futbolcunun zihinsel dayanıklılık, hedef yönelimi ve motivasyonel iklim düzeylerini ve bu özelliklerin yaş, lig düzeyi ve spor deneyimine göre değişip değişmediğini incelemeyi amaçlamaktadır. Sonuçlar, futbolcuların zihinsel dayanıklılık puanlarının yaş, lig düzeyi ve spor deneyimi ile anlamlı bir ilişki içinde olduğunu göstermiştir. Hedef yönelimi puanlarında yaş ve lig düzeyiyle, fakat spor deneyimi ile anlamlı bir farklılık bulunmamıştır. Motivasyonel iklim puanlarının yaş, lig düzeyi ve spor deneyimine bağlı olarak anlamlı şekilde değiştiği görülmüştür. Ek olarak, görev yöneliminin zihinsel dayanıklılık üzerinde olumlu bir etkisi olduğu, motivasyonel iklim alt boyutlarından ustalık ikliminin zihinsel dayanıklılık üzerinde pozitif bir etkisi olduğu tespit edilmiştir. Ancak, performans ikliminin zihinsel dayanıklılık üzerinde anlamlı ve negatif bir etkisi olduğu bulunmuştur. Bu araştırma, profesyonel futbolculardaki zihinsel dayanıklılık, hedef yönelimi ve motivasyonel iklim düzeylerinin demografik faktörlerle ve birbirleriyle önemli ilişkiler içinde olduğunu göstermiştir.

Anahtar Kelimeler: Profesyonel futbolcular, zihinsel dayanıklılık, görev yönelimi, ego yönelimi, motivasyonel iklim

Introduction

Football continues to captivate and unite fans globally, maintaining its enduring popularity. Success in this intensely competitive field isn't only determined by technical, tactical, and physical prowess, but also hinges significantly on the psychological aspects of the sport (Kara, Kara & Özşarı, 2022). This psychological dimension is often deemed pivotal in affecting the goals and outcomes for athletes, especially at the elite level. Consequently, there's a growing interest and research trend in the sport psychology subfield, which directly pertains to this understanding.

A central concept in sports psychology literature is "mental toughness," a multifaceted construct involving, self-control, motivation, persistence, self-belief, and goal attainment skills, among other attributes (Clough & Strycharzyk, 2012; Clough, Earle & Sewell, 2002; Cowden, 2016; Gucciardi, Hanton, Gordon, Mallett & Temby, 2015; Gucciardi, Gordon & Dimmock, 2008; Jaeschke, Sachs & Dieffenbach, 2016; Jones, Hanton & Connaughton, 2002; Madrigal, Hamill & Gill, 2013; Middleton, Martin & Marsh, 2011; Sorensen, Schofield & Jarden, 2016). Mental toughness is a key quality that individuals need to possess for achieving success and navigating through challenges they encounter (Özşarı, Kara & Kara, 2021). Athletes demonstrating high levels of performance and consistency are often attributed with high mental toughness, while those who underperform under pressure are considered to lack it (Crust and Clough, 2011). However, no universally accepted theoretical framework for mental toughness exists yet (Gordon and Gucciardi, 2011). Achievement in sports is not solely determined by talent; the level of an athlete's mental toughness can also significantly affect performance outcomes. How athletes perceive and react to success or failure, and how they use these experiences to improve their performance, is also crucial (Potgieter, 2011).

The achievement goal theory, widely used in sports literature, suggests that athletes' perceptions of success are influenced by their perceived competence and effort (Nicholls, 1984; Nicholls, 1989). According to this theory, individuals define and interpret competence in two distinct ways, referred to as "task" and "ego" goal orientations (Nicholls, 1989). Task-oriented athletes measure success against their personal standards, while ego-oriented athletes measure success relative to others. Elite athletes often exhibit both high task and ego goal orientations (Pensgaard & Roberts, 2002), which have been suggested as necessary for high performance (Mallett & Hanrahan, 2004; Treasure, Lemyre, Kuckza & Standage, 2007). Motivational climate, another construct in the achievement goal theory, refers to the situational goal structure created by significant others in an athlete's environment (Ames, 1992). The motivational climate can influence athletes' views on success and effort and is divided into mastery and performance climates. While the mastery climate values effort and individual growth,

the performance climate emphasizes social comparison. Generally, athletes with a task orientation prefer a mastery climate, while those with an ego orientation prefer a performance climate (Gano-Overway & Eving, 2004).

The Theory of Achievement Goals underscores the influence of goal orientation and motivational climate on athletes' success perceptions (Nicholls, 1989). Immersion in a motivational climate, such as mastery or performance, fosters the adoption of task or ego orientation (Duda & Hom, 1993; Waldron & Krane, 2005). This orientation, impacted by coaches, teammates, and parents, evolves over time (Duda & Whitehead, 1998). High internalization levels can diminish the motivational climate's effect on goal orientation (Dweck & Leggett, 1988). While the impact of motivational climate on athletes' goal orientations may be marginally significant, its effect on various psychological states remains ambiguous. In the context of researching mental toughness, the interplay between goal orientations and motivational climates is pivotal, potentially shaping the attributes of mental toughness.

Conceptualizations of mental toughness and goal orientation in sports illuminate varied behavioral outcomes and results. Task-oriented athletes demonstrate perseverance, high self-efficacy, enjoyment, lower levels of competition-induced anxiety, and adaptable learning strategies compared to their ego-oriented counterparts (Biddle, Wang, Kavussanu & Spray, 2003). Many of these traits are components of mental toughness (Bull, Shambrook, James & Brooks, 2005). Additionally, high motivation and flexible attitudes characterize mental toughness (Thelwell, Such, Weston, Such & Greenless, 2010). However, ego-oriented athletes may exhibit less effort, enjoyment, and higher anxiety levels when confronted with potential failure (Boyd, Callaghan & Yin, 1991). The emphasis on competition and winning can differentiate ego-oriented athletes and potentially affect mental toughness levels. Moreover, high levels of mental toughness might inversely correlate with the negative effects of high ego orientation (Roberts, Treasure & Conroy, 2007). However, elite athletes often demonstrate high levels in both task and ego orientation, equally valuing competition and goal attainment (Pensgaard & Roberts, 2002).

Coaches' positive behaviors influence athletes' mental toughness by fostering self-confidence, and motivation (Weinberg, Butt & Culp, 2011). Such behaviors correspond with high mastery climates, promoting challenging, rewarding, and enjoyable experiences that further skill mastery (Weiss, Amorose & Wilko, 2009). This positive goal orientation can result in improved performance outcomes including increased intrinsic motivation and optimal anxiety levels (Smith, Somoll and Cumming, 2007). Conversely, detrimental coaching attitudes, such as unrealistic expectations or failure to promote individual responsibility, can hamper mental toughness development (Gucciardi, Gordon, Dimmock & Mallett, 2009). Further, a mastery

motivational climate fostered by parents and peers also contributes to the development of mental toughness. For instance, supportive and motivating roles of parents and peers can enhance athletes' toughness (Mallett & Coulter, 2012).

The purpose of this research is to examine the relationship between professional footballers' levels of mental toughness, goal orientation, and motivational climate. A secondary objective is to determine whether these levels vary according to independent variables such as age, league level, and sports experience. In sports, mental toughness, goal orientation, and perceived motivational climate are known to influence athletes' performances (Álvarez, Walker & Castillo, 2018). The multidimensional nature of mental toughness and levels of goal orientation and motivational climate are considered critical in sports environments. Evaluating these aspects among active professional football players in the TFF 1st League, TFF 2nd League, and TFF 3rd League, along with their demographic variables, can provide valuable insights for athletes, coaches, and sports psychology practitioners.

Method

In this section, information about the research model, data collection tools, research group and the analysis of the collected data are described.

Research Model

This research was designed within the parameters of descriptive screening, relational screening, and regression methods, with the goal of exploring the mental toughness, goal orientation, and motivational climate levels among professional football players. A descriptive survey model is described as a research type that aims to depict a situation as it was in the past or as it currently is. In this model, the individuals, events, or objects that are the focus of the research are assessed in their actual state, with no intention to alter or influence the existing circumstances. Relational survey model, on the other hand, is defined as a type of research that reveals the presence or explains the degree of change between two or more variables (Karasar, 2006). The multiple linear regression model to be used in this research describes the direction and magnitude of the relationship between two or more variables. If the value of one of the variables is known, it facilitates making predictions about the other variable(s) (Ersöz & Ersöz, 2020). The multiple linear regression model will examine the relationship between the dependent variable (mental toughness) and the independent variables (goal orientation and motivational climate).

Participants

The population of the study consists of professional football players playing in TFF 1st League, TFF 2nd League and TFF 3rd League in the 2021-2022 football season. There are 19 teams in TFF 1st League, 39 teams in TFF 2nd League, 55 teams in TFF 3rd League, 113 teams in total and 2825 licensed football

players. The sample of the study consists of 887 professional football players, 149 from TFF 1st League, 279 from TFF 2nd League and 459 from TFF 3rd League, who played in the 2021-2022 football season. The sample was selected by cluster sampling method. Cluster sampling method is used in research where the universe volume is large, the distance between the universe units is long and the universe consists of clusters with close characteristics (Ural and Kılıç, 2005). In quantitative research, since it is aimed to develop understandings and generalisations based on the data collected with an inductive approach, the sample size should be large enough to represent the universe (Baştürk & Taştepe, 2013). In this context, the sample size in the study represents the universe.

Data Collection Tools

The data used in the study were collected online. Personal Information Form, Sport Mental Toughness Questionnaire (SMTQ), Task and Ego Orientation in Sport Questionnaire (TEOSQ) and Perceived Motivational Climate in Sport Questionnaire (PMCSQ) were administered to the professional football players.

Personal Information Form: A personal information form was compiled by the researcher to gather demographic details from professional football players in the TFF 1st, 2nd, and 3rd Leagues during the 2021-2022 season, forming the study's independent variables. This form solicited answers to three key questions: the athlete's age, their league level, and the duration of their sports experience.

Sport Mental Toughness Questionnaire (SMTQ): Sport Mental Toughness Questionnaire (SMTQ), developed by Sheard, Golby and van Wersch (2009) and adapted for Turkish athletes by Altıntaş (2015), assesses athletes' mental toughness via three sub-dimensions: "confidence", "consistency", and "control". This 14-item scale uses a 4-point likert system. These sub-dimensions respectively reflect an athlete's belief in their abilities, composure under pressure, and responsibility and focus towards set goals.

Task and Ego Orientation in Sport Questionnaire (TEOSQ): Task and Ego Orientation in Sport Questionnaire developed by Duda (1989) consists of 13 items, 7 of which are task orientated and 6 of which are ego orientated. The internal consistency of the scale was determined as 0.79 for task orientation and 0.81 for ego orientation (Duda & Whitehead, 1998). In addition, Duda (1992) found the three-week test-retest reliability of the scale as 0.68 for task orientation and 0.75 for ego orientation. In the adaptation study conducted with Turkish athletes, Toros (2001) found that these two factors explained 58% of the total variance. He also confirmed internal consistency (0.87 for task orientation and 0.85 for ego orientation) and three-week test-retest reliability (0.65 for task orientation and 0.72 for ego orientation) for this group.

Perceived Motivational Climate in Sport Questionnaire (PMCSQ): Perceived Motivational Climate in Sport Questionnaire has two sub-dimensions: mastery climate (12 items) and performance climate (9 items) and uses a 5-point rating system. Walling, Duda and Chi (1993) confirmed the construct validity of the scale through both exploratory and confirmatory factor analysis and identified two factors: mastery and performance climate. Internal consistency coefficients were .73-.84 for performance climate and .80-.81 for mastery climate. In the adaptation study of Toros (2001), it was found that these factors explained 51% of the total variance and the internal consistency coefficients were .84 for mastery climate and .90 for performance climate. The three-week test-retest reliability was .66 for mastery climate and .74 for performance climate. The factor analysis results of this study were consistent with the original scale development study.

Data Analysis

Data analysis was conducted using statistical package programs, and the reliability of the research scales was assessed through the Cronbach's Alpha internal consistency coefficient. Descriptive statistics were utilized to ascertain participants' levels of sport-related mental toughness, task and ego orientation, and perceived motivational climate (data gathered from 973 individuals via questionnaires). Following the examination and exclusion of missing values and outliers, 887 questionnaires were ultimately analyzed. Parametric tests were applied based on kurtosis and skewness values. For multiple comparisons, One-Way ANOVA was used, while LSD and Tukey tests determined the source of differences. Correlation and regression methods were employed for the relational model.

Ethical Approval

This research was ethically approved by the decision of Mersin University Social and Human Sciences Ethics Committee dated 25.10.2021 and numbered 165.

Findings

This study sought to explore the correlation between professional football players' mental toughness, goal orientation, and motivational climate levels. The findings, organized in accordance with the research's sub-problems, are detailed below. They are divided into two main categories: demographic information about the participants, and the results and interpretations derived from the application of the Sport Mental Toughness Questionnaire (SMTQ), Task and Ego Orientation in Sport Questionnaire (TEOSQ), and the Perceived Motivational Climate in Sport Questionnaire (PMCSQ). Relevant explanations accompany tabulated findings.

Table 1. Findings related to demographic characteristics of participants

Variables		N	%
Gender	Male	887	100
Age	16-20	191	21,5
	21-25	326	36,8
	26-30	192	21,6
	31-34	148	16,7
	35 and over	30	3,4
League Level	TFF 1st League	149	16,8
	TFF 2nd League	279	31,5
	TFF 3rd League	459	51,7
Sports Experience	1-9 years	139	15,7
	10-18 years	593	66,8
	19 and over years	155	17,5

The study involved 887 male football players, with age and experience distributed as follows: 21% between 16-20 years old, 36.8% between 21-25, 16.7% between 31-34, and 3.4% aged 35 and above. Regarding league level, 16.8% played in the TFF 1st league, 31.5% in the TFF 2nd, and 51.7% in the TFF 3rd. Experience-wise, 15.7% had 1-9 years, 66.9% had 10-18 years, and 17.5% had 19 years or more (Table 1).

Table 2. Findings related to the comparison of professional footballers' SMTQ subdimension score averages according to age category variable

Sub Dimensions	Age	N	M	SD	f	p	Significant Difference
Confidence	16-20	191	3,04	,390	6,337	,000**	4-1 4-3
	21-25	326	3,13	,363			
	26-30	192	3,13	,385			
	31-34	148	3,24	,374			
	35 and over	30	3,04	,185			
Consistency	16-20	191	3,28	,496	2,748	,027*	4-3
	21-25	326	3,27	,464			
	26-30	192	3,23	,379			
	31-34	148	3,38	,461			
	35 and over	30	3,19	,214			
Control	16-20	149	2,45	,685	2,255	,061	-
	21-25	279	2,39	,502			
	26-30	459	2,49	,569			
	31-34	593	2,54	,551			
	35 and over	155	2,53	,351			

Groups: 1: 16-20 years, 2: 21-25 years, 3: 26-30 years, 4: 31-34 years, 5: 35 and over. **p<0,01, *p<0,05.

The One-way ANOVA test revealed that there were significant differences between different age groups in total score, confidence and consistency sub-dimensions of mental toughness ($p < 0.05$). Especially, in the sub-dimension of confidence, differences were recorded between 16-20 and 31-34 age groups and 21-25 and 31-34 age groups. In the consistency sub-dimension, differences were found between 26-30 and 31-34 age groups (Table 2).

Table 3. Findings related to the comparison of professional footballers' SMTQ subdimension score averages according to league level variable

Sub Dimensions	League Level	N	M	SD	f	p	Significant Difference
Confidence	TFF 1st League	149	3,25	,342	13,261	,000**	1-2
	TFF 2nd League	279	3,13	,351			1-3
	TFF 3rd League	459	3,05	,390			2-3
Consistency	TFF 1st League	149	3,45	,443	13,115	,000**	1-2
	TFF 2nd League	279	3,23	,424			1-3
	TFF 3rd League	459	3,25	,455			
Control	TFF 1st League	149	2,52	,682	1,126	,325	-
	TFF 2nd League	279	2,44	,597			
	TFF 3rd League	459	2,44	,502			

Groups: 1: TFF 1st League, 2: TFF 2nd League, 3: TFF 3rd League. ** $p < 0,01$.

The One Way ANOVA test highlighted significant differences in the confidence and consistency sub-dimensions of mental toughness across different league levels ($p < 0.05$). Specifically, confidence varied between TFF 1st, 2nd, and 3rd leagues, while the consistency sub-dimension differed between the TFF 1st league and both TFF 2nd and 3rd leagues (Table 3).

Table 4. Findings related to the comparison of professional footballers' SMTQ subdimension score averages according to sports experience variable

Sub Dimensions	Sports Experience	N	M	SD	f	p	Significant Difference
Confidence	1-9 years	139	3,08	,332	16,983	,000**	3-1
	10-18 years	593	3,10	,381			3-2
	19 and over years	155	3,28	,353			
Consistency	1-9 years	139	3,46	,415	44,376	,000**	1-2
	10-18 years	593	3,18	,440			3-2
	19 and over years	155	3,48	,395			
Control	1-9 years	139	2,58	,707	23,405	,000**	1-2
	10-18 years	593	2,37	,510			3-2
	19 and over years	155	2,67	,549			

Groups: 1: 1-9 years, 2: 10-18 years, 3: 19 and more years. ** $p < 0,01$.

The One Way ANOVA test revealed significant disparities in all sub-dimensions of mental toughness based on sport experience ($p < 0.05$). Notably, confidence differed between athletes with 1-9 years and those with 19 years or more, and those with 10-18 years and over 19 years. The consistency and control sub-dimensions also varied between the different years of experience groups (Table 4).

Table 5. Findings related to the comparison of professional footballers' TEOSQ subdimension score averages according to age category variable

Sub Dimensions	Age	N	M	SD	f	p	Significant Difference
Task Orientation	16-20	191	3,32	,954	8,457	,000**	
	21-25	326	3,48	,798			4-1
	26-30	192	3,41	,860			4-3
	31-34	148	3,67	,776			4-5
	35 and over	30	2,75	1,287			
Ego Orientation	16-20	191	2,99	1,017	15,228	,000**	4-3
	21-25	326	3,22	,833			4-5
	26-30	192	2,96	,829			3-5
	31-34	148	3,43	,758			2-5
	35 and over	30	2,30	,968			1-5

Groups: 1: 16-20 years, 2: 21-25 years, 3: 26-30 years, 4: 31-34 years, 5: 35 and over. ** $p < 0,01$.

The One Way ANOVA test was used to analyze whether athletes' task and ego orientations differed by age group. The results showed significant differences in total scale score and both sub-dimensions ($p < 0.05$). The 31-34 age group had the highest average scores in task and ego orientations, while the lowest averages were observed in those aged 35 and above (Table 5).

Table 6. Findings related to the comparison of professional footballers' TEOSQ subdimension score averages according to league level variable

Sub Dimensions	League Level	N	M	SD	f	p	Significant Difference
Task Orientation	TFF 1st League	149	3,63	,817	8,893	,000**	1-2
	TFF 2nd League	279	3,28	,841			3-2
	TFF 3rd League	459	3,47	,904			
Ego Orientation	TFF 1st League	149	3,30	,911	5,601	,004**	1-2
	TFF 2nd League	279	3,00	,895			
	TFF 3rd League	459	3,13	,8820			

Groups: 1: TFF 1st League, 2: TFF 2nd League, 3: TFF 3rd League. **p<0,01.

The One Way ANOVAtest was used to assess if task and ego orientations among athletes varied based on league level. The results revealed significant differences in total scale score and both sub-dimensions (p<0.05). Significant distinctions were noted between the TFF 1st and 2nd leagues and the TFF 2nd and 3rd leagues in task orientation. Ego orientation and total scale score also varied significantly between the TFF 1st and 2nd leagues and the TFF 2nd and 3rd leagues (Table 6).

Table 7. Findings related to the comparison of professional footballers' TEOSQ subdimension score averages according to sports experience variable

Sub Dimensions	Sports Experience	N	M	SD	f	p	Significant Difference
Task Orientation	1-9 years	139	3,55	,853	1,650	,193	-
	10-18 years	593	3,41	,885			
	19 and over years	155	3,46	,869			
Ego Orientation	1-9 years	139	3,17	,917	,428	,652	-
	10-18 years	593	3,12	,901			
	19 and over years	155	3,07	,857			

Groups: 1: 1-9 years, 2: 10-18 years, 3: 19 and more years.

The One Way ANOVAtest, we examined if athletes' task and ego orientations varied based on their sport experience. The analysis results (Table 7) indicated no significant differences in the total scale score or either sub-dimension (p>0.05).

Table 8. Findings related to the comparison of professional footballers' PMCSQ subdimension score averages according to age category variable

Sub Dimensions	Age	N	M	SD	f	p	Significant Difference
Mastery Climate	16-20	191	3,86	,605	1,334	,255	-
	21-25	326	3,77	,567			
	26-30	192	3,83	,553			
	31-34	148	3,75	,525			
	35 and over	30	3,85	,308			
Performance Climate	16-20	191	2,98	,677	7,043	,000**	2-1
	21-25	326	3,20	,599			3-1
	26-30	192	3,03	,587			4-1
	31-34	148	3,20	,508			5-1
	35 and over	30	3,35	,509			

Groups: 1: 16-20 years, 2: 21-25 years, 3: 26-30 years, 4: 31-34 years, 5: 35 and over. **p<0,01.

The One Way ANOVAtest was used to analyze if athletes perceived motivational climates varied by age group. The results (Table 8) revealed significant differences in the performance climate sub-dimension (p<0.05), particularly between the 16-20 age group and all other age groups (21-25, 26-30, 31-34, and 35+).

Table 9. Findings related to the comparison of professional footballers' PMCSQ subdimension score averages according to league level variable

Sub Dimensions	League Level	N	M	SD	f	p	Significant Difference
Mastery Climate	TFF 1st League	149	3,83	,433	3,161	,043*	2-3
	TFF 2nd League	279	3,86	,542			
	TFF 3rd League	459	3,76	,601			
Performance Climate	TFF 1st League	149	3,27	,473	11,848	,000**	1-2
	TFF 2nd League	279	2,99	,688			3-2
	TFF 3rd League	459	3,15	,576			

Groups: 1: TFF 1st League, 2: TFF 2nd League, 3: TFF 3rd League. **p<0,01, *p<0,05.

The One Way ANOVAtest was utilized to assess if athletes perceived motivational climates varied based on league level. Significant differences (p<0.05) were found in the scale's sub-dimensions (Table 9). These differences were noted between the TFF 2nd and 3rd leagues in the mastery climate sub-dimension, and between the TFF 1st and 2nd leagues as well as the TFF 2nd and 3rd leagues in the performance climate sub-dimension.

Table 10. Findings related to the comparison of professional footballers' PMCSQ subdimension score averages according to sports experience variable

Sub Dimensions	Sports Experience	N	M	SD	f	p	Significant Difference
Mastery Climate	1-9 years	139	3,82	,645	5,994	,003**	3-2
	10-18 years	593	3,76	,575			
	19 and over years	155	3,93	,365			
Performance Climate	1-9 years	139	3,12	,597	3,295	,038*	3-2
	10-18 years	593	3,09	,624			
	19 and over years	155	3,23	,529			

Groups: 1: 1-9 years, 2: 10-18 years, 3: 19 and more years. **p<0,01, *p<0,05.

One Way ANOVA test was conducted to determine if athletes perceived motivational climates varied based on their sport experience. Significant differences (p<0.05) were observed in the scale's sub-dimensions (Table 10), particularly between the 10-18 years and 19 and over years groups in both the mastery and performance climate sub-dimensions.

Table 11. Correlation analysis results of professional football players' levels of mental toughness, goal orientation and perceived motivational climate

N=887	1	2	3	4	5	6	7
1-Confidence	1						
2-Consistency	,557**	1					
3-Control	,263**	,375**	1				
4-Task Orientation	,303**	,087**	-,089**	1			
5-Ego Orientation	,281**	,074*	-,197**	,738**	1		
6-Mastery Climate	,483**	,362**	,021	,261**	,112**	1	
7-Performance Climate	,102**	-,072*	-,297**	,285**	,351**	,013	1

**p<0,01, *p<0,05.

The correlation analysis showed various levels of significant relationships among confidence, consistency, control, task orientation, ego orientation, mastery climate, and performance climate (Table 11). Confidence had a medium positive correlation with task orientation (r=.303, p<0.01) and mastery climate (r=.483, p<0.01), and a low positive correlation with ego orientation (r=.281, p<0.01) and performance climate (r=.102, p<0.01). Consistency demonstrated a low positive correlation with task orientation (r=.087, p<0.01), ego orientation (r=.074, p<0.05), and mastery climate (r=.362, p<0.01). Conversely, it had a low negative correlation with performance climate (r=-.072, p<0.05). Control was negatively correlated with task orientation (r=-.089, p<0.01), ego orientation (r=-.197, p<0.01), and performance climate (r=-.297, p<0.01). Task orientation was positively correlated with both mastery climate (r=.261, p<0.01) and performance climate (r=.285, p<0.01). Ego orientation showed a low positive correlation with mastery climate (r=.112, p<0.01) and a medium positive correlation with performance climate (r=.351, p<0.01).

Table 12. Multiple linear regression analysis results related to TEOSQ and SMTQ

Variable	B	SER	Beta(β)	t	p	VIF
Constant	2,819	,048	-	58,749	,000**	-
Task Orientation	,071	,020	,180	3,650	,000**	2,193
Ego Orientation	-,026	,019	-,067	-1,357	,175	2,193
R=,138	R Square =,019	Adj. R Square=0,17				
F ₍₂₋₈₈₄₎ =8,613	p=,000					

*Independent variable: Task Orientation and Ego Orientation - * Dependent variable: Mental Toughness

The multiple regression analysis presented in Table 12 examines the impact of task and ego orientation in sport, the independent variables, on mental toughness in sport, the dependent variable. The model is statistically significant (F₍₂₋₈₈₄₎= 8,613; p<.001) but the effect size is small, with R² at 0.019 and adjusted R² at 0.017. This suggests that task and ego orientation in sport only account for 0.17% of the variability in mental toughness in sport. Among the independent variables, only task orientation shows a significant effect (β=0.180; p<0.01) on mental toughness. This means an increase in task orientation level in sport by one unit will correspondingly increase mental toughness in sport by 0.180. In conclusion, higher task orientation positively influences mental toughness in sport.

Table 13. Multiple linear regression analysis results related to PMCSQ and SMTQ

Variable	B	SER	Beta(β)	t	p	VIF
Constant	2,330	,092	-	25,271	,000	-
Mastery Climate	,229	,019	,369	11,883	,000	1,000
Performance Climate	-,070	,018	-,122	-3,933	,000	1,000
R=,387	R Square =,150	Adj. R Square=,148				
F ₍₂₋₈₈₄₎ =77,651	p=,000					

*Independent variable: Mastery Climate and Performance Climate - * Dependent variable: Mental Toughness

The impact of the perceived motivational climate in sport, particularly its sub-dimensions of mastery and performance climate, on mental toughness in sport is analyzed via a significant multiple regression model ($F_{(2-884)} = 77,751$; $p < 0.001$), as shown in Table 13. With R^2 and adjusted R^2 values at 0.150 and 0.148, these independent variables explain about 15% of the changes in mental toughness. Upon considering individual effects, mastery climate displays a significant positive impact on mental toughness ($\beta = 0.369$; $p < 0.01$). This suggests an increase in mastery climate by one unit will raise mental toughness by 0.369. Conversely, performance climate shows a significant negative impact on mental toughness ($\beta = -0.122$; $p < 0.01$), indicating a one-unit increase in performance climate reduces mental toughness by 0.122. In conclusion, an increase in mastery climate positively influences mental toughness, while an increase in performance climate has the opposite effect.

Discussion

In this segment of the study, which scrutinizes the interconnection among mental toughness, goal orientation, and motivational climate levels of professional football players, we engage in a detailed discussion and interpretation of the results derived from statistical analyses. These findings are explored within the framework of the research issues. Moreover, informed commentary is provided based on the obtained data and its implications.

In evaluating our findings relative to the age category variable, we identified significant variances favoring the 31-34 age group. This suggests that components such as internal values, emotions, and behaviours that influence the perception of pressure and difficulties among professional football players evolve with age, resulting in enhanced confidence, consistency, and mental toughness. An examination of literature on the research sub-problem yielded studies with both congruent and divergent findings. Notably, Kalkavan, Özdilek, and Çakır (2020) found athletes aged 26-31 scored higher on the confidence sub-dimension of mental toughness than those aged 14-19, while Crust et al. (2014) also found a significant positive association between age and mental toughness. These findings lend support to our results. Conversely, some studies contradicted our findings. Kayhan, Hacicaferoğlu, Aydoğan and Erdemir (2018) found no age-related difference in mental toughness scores among individual and team athletes. Similarly, Sarı, Sağ, and Demir (2020) found no variation in mental toughness scores of taekwondo athletes based on age, a conclusion echoed by Crust (2009). These studies introduce a counterpoint to our results.

Our study's findings, evaluated in accordance with the league level variable, suggest significant advantages for football players in the TFF 1st League in the confidence and consistency sub-dimensions. Conversely, TFF 2nd League players displayed superior confidence sub-dimension mean scores compared to those in the TFF 3rd League. This suggests that as the league level rises, so do pressure situations, task complexities, and

stress factors. Nevertheless, athletes in higher leagues appear to display more effective coping mechanisms against performance inhibitors. A review of literature related to our research's sub-problem revealed studies with analogous and contrasting findings. Yazıcı (2016) found that the mental toughness levels of professional basketball players varied significantly by league level. Likewise, a study on elite female football players (Danielsen, Rodahl, Giske & Høigaard, 2017) noted that 1st League players demonstrated significantly higher mental toughness scores than those in the 2nd and 3rd Leagues. These studies align with our findings. Conversely, studies by Yıldız (2017) found no difference in mental toughness levels of professional football players according to league level. Similar findings were echoed by Bair (2011), with no significant variations observed in mental toughness scores according to competition or league level. These findings stand in contrast to our study's results.

In assessing our study's findings in relation to the sport experience variable, we found athletes with 19+ years of experience had significantly higher mental toughness scores than those with 1-9 and 10-18 years of experience. Moreover, athletes with 10-18 years of experience scored higher in mental toughness than their 1-9 years counterparts. This suggests that the multifaceted qualities of mental toughness improve with increased sporting experience, which also appears to be a differentiating factor in athletes' consistent performance under pressure. Reviewing the literature, similar findings have been reported. In the studies conducted by Eroğlu et al. (2020) and Maraşlı (2018), significant differences were found in mental endurance scores in relation to sport experience, generally in favour of more experienced athletes. Likewise, a longitudinal study by Jónsson and Fernandes (2021) showed significantly improved mental toughness scores over time among young Icelandic international football players. Conversely, Newland et al. (2013) found no significant differences in mental toughness scores based on sports experience, providing a counterpoint to our study's results.

In assessing our findings related to the age category variable, we observed notable disparities in task and ego orientation scores of professional football players across all age groups. The 31-34 age group demonstrated the highest mean scores in both task and ego orientation, suggesting a complementary interplay between these two dimensions of goal orientation in this age bracket. This might be due to elite athletes viewing ego orientation as an enhancing factor to task orientation, considering both task mastery and social status as key objectives. Additionally, this group appears to amalgamate intrinsic motivation associated with task orientation and extrinsic motivation linked to ego orientation. Conversely, athletes aged 35 and above scored lowest in task and ego orientations, possibly reflecting reduced perceived competence and focus on career transition. Similar findings are reported in literature. Gunnarsson (2021) and Rhea (2019) all noted significant age-related differences in task and ego orientation scores among athletes in

their respective studies, thereby aligning with our findings. On the contrary, studies by Toros (2001) found no significant differences in task and ego orientation scores across different age groups, providing counterpoints to our research's findings.

Upon investigating the task and ego orientation scores of professional football players in relation to the league level variable, our study discerned significant differences across all scale sub-dimensions. Given the scarcity of studies addressing this variable, our findings will enhance the extant literature. Players in TFF.1 League exhibited the highest mean scores in task and ego orientations, whereas those in TFF.2 League demonstrated the lowest. Furthermore, TFF 3rd League players reported significantly higher task orientation levels than their counterparts in TFF 2nd League. The variations across the three different leagues may be attributed to the perceived competence, a crucial aspect of both task and ego orientations. High scores in task and ego orientations in TFF 1st League players suggest high perceived competence, emphasizing skill development, effort (task orientation), along with the importance of winning and competition (ego orientation). Conversely, elevated task orientation in TFF 3rd League players could be due to the league's position as the final step towards the elite level, attracting young players from amateur leagues, who typically exhibit higher task orientation. In terms of literature, our findings align with studies by Özsarı and Çetin (2019) both reporting disparities in task and ego orientation scores based on league level. However, studies by Bulinda, Mugala Bulinda and Bukhala (2016) which did not observe differences in task and ego orientation scores across varying league levels, provide contrast to our findings.

Our study found no significant difference in task and ego orientation scores across all sub-dimensions of the scale among professional football players with varying years of sports experience (1-9, 10-18, 19 and above). This suggests similar perceptions of success and failure across these groups, indicating that factors influencing goal orientations may not be impacted by sport experience. Supporting our findings, several studies reported no variation in task and ego orientation scores in relation to sports experience. Yazıcı (2021) noted this pattern among archery athletes, Yıldız (2018) among basketball athletes, and Özdemir (2019) among team athletes. Additional studies by Morris and Kavussanu (2008) likewise found no significant difference in task and ego orientations due to sports experience. These parallel findings substantiate the results of our research.

Our study found no significant differences in mastery climate scores among professional football players across different age categories. However, significant differences emerged in performance climate scores, which were notably higher in players aged 35 and above. Further, performance climate scores in the 21-25 age group surpassed those in the 26-30 age group. These findings suggest that as football players age, there's an uptick in the performance climate levels, often assessed via social comparisons. The elevated performance climate scores of

the 21-25 age group may reflect the influence of coach, teammate, and social circle messaging, which often emphasises competition and win. Upon literature review, some studies aligned with our findings, others did not. Robazza, Morano, Bortoli and Ruiz (2022) found no age-related differences in athletes' perceived mastery or performance climate, which impacted their emotion regulation strategies, emotions, and biopsychosocial experiences. Similarly, Van Yperen et al. (2021) reported comparable findings in a sample of young football players. These latter studies contradict our results.

Evaluating our research findings against the league level variable, it appears that TFF 2nd League teams promote effort, collective learning, and individual growth more than TFF 3rd League teams, considering situational and environmental factors. Conversely, TFF 1st and 3rd Leagues encourage a performance climate more than the TFF 2nd League, with perceptions possibly leaning towards social comparisons, intra-team competition, and talent as performance criteria. TFF 1st League players scoring significantly higher overall, in both mastery and performance climate sub-dimensions, compared to their 2nd and 3rd League counterparts, could imply differentiation among motivational climate sub-dimensions. Literature review revealed studies both aligning with and contradicting our findings. Engan and Sæther (2018) found that mastery climate scores were significantly higher among elite youth football players in 1st League clubs compared to those in 2nd League clubs, echoing our study's findings. In contrast, other studies including those of hammer throwers (Benczenleitner, Bognár, Révész, Paksi, Csáki & Gécz, 2013), footballers (Kavussanu, White, Jowett & England, 2011) and badminton players (Gencer & İlhan, 2012) reported similar findings, opposing the outcomes of our research.

In our study, we found significant differences in mastery and performance climate sub-dimensions when evaluated against the sports experience variable. Specifically, athletes with 19 or more years of sports experience scored significantly higher than those with 10-18 years of experience. Contrary to some literature suggesting a decrease in mastery climate and a non-significant transition to performance climate with increased sports experience (Toros & Pense, 2002), our findings reveal significant differences in both climates as sports experience increases. This could be understood within the perceived motivational climate conceptual framework, suggesting experienced athletes perceive a blend of mastery and performance climates at elite levels (Duda and Whitehead, 1998). Contradictory findings were noted in the literature, with Altıntaş (2010) finding no significant differences in perceived motivational climate scores related to sports experience among athletes from various disciplines, University Super League basketball players, and amateur male footballers, respectively. These findings conflict with our study.

Our study observed a positive correlation between professional footballers' mental toughness sub-dimensions—confidence and consistency—and both task and ego orientations. Task orientation was found to significantly and positively affect mental toughness, while a negative correlation was seen between the control sub-dimension of mental toughness and both orientations. Mental toughness, a schema through which athletes make sense of their sports experiences (Harmison, 2011), is positively impacted by an athlete's high level of task orientation, leading to consistency, persistent effort, and emphasis on individual development. Factors including goal orientation, which impacts how athletes perceive competition, can influence how they interpret mental toughness. Task-oriented athletes are more resilient, enjoy sports more, exhibit lower levels of anxiety, and use adaptive learning strategies and traits found to align with the multidimensional structure of mental toughness (Bull et al., 2005). Consistent with our findings, Bair (2011) reported a significant positive correlation between task orientation and mental toughness in university athletes. Furthermore, Gucciardi (2010) found that task orientation positively impacted Austrian footballers' intrinsic motivation levels and mental toughness. Thus, the literature supports our findings.

Our research found a significant positive correlation between professional footballers' mental toughness sub-dimension—confidence—and both mastery and performance climates. A similar positive correlation was found between the consistency sub-dimension and the mastery climate, though an inverse correlation was observed with performance climate. A negative correlation was also found between the control sub-dimension of mental toughness and performance climate. The impact of mastery climate on mental toughness was significant and positive, while the performance climate showed a significant negative effect. These results indicate that the mental toughness of athletes is significantly influenced by cues from their social environment, such as coaches, teammates, and parents. A supportive coach-athlete relationship, typically associated with a mastery climate, can foster mental toughness (Weiss, Amorose, & Wilko, 2009). Coaches promoting a positive, socially supportive relationship with their athletes often facilitate hard work, physical limit pushing, and learning from mistakes, reflecting a mastery climate. The positive outcomes of mastery climates—including high levels of intrinsic motivation, self-efficacy, effort, and optimal anxiety—are associated with the multidimensional structure of mental toughness (Smith, Somoll & Cumming, 2007). Teammates also contribute significantly to the motivational climate, especially given their extended periods of interaction with players. Those who provide emotional support, foster opportunities for encouragement and development, and spur each other on to work harder are seen to positively impact mental toughness (Thelwell et al., 2010). The performance climate, often underlined by social comparisons and a heightened sensitivity towards mistakes, can be linked to high burnout levels and lower self-esteem (Got-

wals, Dunn & Wayment, 2003). This climate may also foster antisocial behaviours and lower levels of sport participation (Bortoli, Messina & Robazza, 2012). Instances where coaches force unrealistic expectations or overemphasise success, thus hindering skill development, could be seen as negatively impacting mental toughness. As such, a performance climate is likely to decrease athletes' motivation, self-confidence, and increase anxiety levels, thereby negatively impacting mental toughness. Thus, our research aligns with existing literature, linking a higher performance climate with reduced mental toughness.

Conclusions

Our study explored various aspects of professional football players' mental and performance states, assessing mental toughness, task and ego orientation, and mastery and performance climate scores. We evaluated these aspects considering variables such as age, league level, and sport experience.

The analysis showed that players aged between 31-34 displayed higher mental toughness. Similarly, this age group achieved the highest mean scores in task and ego orientation. However, those over 35 had the lowest mean scores in these areas.

Comparing league levels, players in the TFF 1st League showed superior mental toughness and task and ego orientation scores. TFF 2nd League players, though, had higher scores in the confidence sub-dimension than TFF 3rd League players. TFF 2nd League players' teams also encouraged more effort and individual development compared to TFF 3rd League. On the contrary, TFF 1st and TFF 3rd League teams were more performance oriented.

The sport experience variable demonstrated that players with 19 or more years of experience have significantly higher mental toughness scores and mastery and performance climate scores than players with less experience. However, players with 10-18 years of experience had higher mental toughness scores than those with 1-9 years.

There were no significant differences found when evaluating task and ego orientation scores by sport experience. Similarly, there were no significant variations when examining mastery climate scores according to age. However, the performance climate scores for players over 35 were significantly higher, with players aged 21-25 showing higher scores than the 26-30 age group.

Our research evaluated the relationship between professional football players' mental toughness and goal orientation, along with the connection between mental toughness and their perceived motivational climate. A positive correlation was identified between the confidence and consistency dimensions of mental toughness and both task and ego orientation. Specifically, confidence had a moderate positive relationship with task

orientation and a minor positive one with ego orientation. Consistency displayed a minor positive relationship with both. However, the control dimension of mental toughness showed a slight negative correlation with both task and ego orientation. Subsequent analysis confirmed that task orientation positively influences mental toughness.

Regarding the relationship between mental toughness and perceived motivational climate, a significant positive correlation was found between the confidence dimension of mental toughness and both mastery and performance climate. Specifically, confidence displayed a moderate positive relationship with mastery climate and a minor positive one with performance climate. Consistency showed a moderate positive relationship with mastery climate but a minor negative one with performance climate. The control dimension of mental toughness was found to have a slight negative relationship with performance climate. Further analysis showed that while mastery climate has a positive impact on mental toughness, performance climate influences it negatively.

Recommendations

Our study analysed the interplay between mental toughness, goal orientation, and motivational climate among professional footballers. The results suggest that expanding the research to include athletes from other sports (e.g., basketball, volleyball, handball) and broadening demographic variables could provide deeper insights. The research could be diversified by also studying individual athletes rather than just team sports players. Our findings indicated that task orientation and mastery climate enhance mental toughness, while performance climate adversely affects it. This implies that coaches can boost performance by fostering behaviours supporting task orientation and mastery climate. Given the scarcity of studies exploring the impact of individual and situational factors on athletes' mental toughness in success and failure scenarios, more research in this area is recommended. Additionally, as mental toughness—a vital factor for performance—seems to develop with age and sport experience, further studies should focus on cultivating mental toughness from an early age. Lastly, considering the positive relationship between task orientation - mastery climate and mental toughness, athletes are advised to prioritize individual development, use personal performance as a benchmark, and consistently strive for improvement, irrespective of outcomes.

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