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# Contribution of self-assessment of football competencies and the length of football experience for explaining the self-efficacy in junior and senior players

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**Abstract**

Aim of this paper was to examine the contribution of football experience and the self-assessment of tactical/technical skills and social competencies on the perceived self-efficacy in junior and senior football players. A total of 164 football players from Bosnia & Herzegovina have taken part in the research, 79 of which were professional senior players and 85 were professional U18 (junior) players. Three measuring instruments were used in the research: A questionnaire on general information, a self-assessment scale of self-efficacy for football players and a scale for estimating tactical/technical and social competencies in football was used to gather data. Based on the results and the conducted analyses, it is indicative that the model that encompasses the length of football experience and a self-assessment of tactical/technical and social competencies in senior football players contributed around 8.5% to the total explanation of perceived self-efficacy. In senior players, the length of experience has a greater significance in perceived self-efficacy compared to the perceived success in performing football elements. The set model doesn't have an equal contribution in junior players, where the model entirely contributed with 14.3% of the explanation of perceived self-efficacy, and the perceived success of performing football elements also has a statistically significant contribution. So, the model which encompasses football experience and the perceived success in performing football elements (tactical/technical and social competencies in football) is not equally predictive in junior and senior players.

***Keywords:*** *Self-efficacy, Experience, Success, Football*

## Introduction

Success in football includes the simultaneous acting of multiple factors. As outlined by Petrić (1981), Jerković, and Barišić (1993), these factors are made up of a set of different knowledge and abilities, such as tactical/technical knowledge applied in competition (competitive efficacy), specific abilities, motor and functional abilities, morphological structure, and cognitive-conative aspects.

However, in addition to the known, abilities and skills for efficient and successful performance of certain tasks depends on individual's belief that a certain task will be successfully performed is also important. An individual's belief in their own competency and success at a certain task is defined as self-efficacy.

Bandura (1986) considers self-efficacy a foundational aspect of performance. It is practically assumed that, in competitive conditions, a higher degree of self-efficacy contributes to better results and lower emotional arousal. According to Bandura (1986), self-efficacy is an individual's estimate of their own abilities to organize and perform certain actions necessary for achieving the desired outcomes.

Self-efficacy doesn't just relate to real skills that someone

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possesses, but it also includes estimates of what an individual can achieve regardless of their actual skills. There are two basic types of expectations in the process of realizing behaviors aimed towards a goal in the scope of this theory: expectations of efficacy and expectations of outcomes. Expectations of outcomes refer to an individual's belief that a certain behavior will lead to a desired outcome, and expectations of personal efficacy refer to an individual's belief in their capabilities to achieve the behavior that will lead towards the expected outcome (Ivanov, 2007). Bandura and Cervone (1983) report that greater perceived self-efficacy for achieving a certain goal result in a higher degree of effort that an individual is willing to put into achieving a specific goal.

Culos-Reed, Brawley, Gyurcsik (2001) list four main determinants that act upon the perception and expectations of their own efficacy: the experience of success and skill, indirect experience, verbal convincing (persuasion), and psychologically-affective state. The experience of success and skill is the most important determinant of belief in one's own efficacy, and it is developed through the agency of achievement. The above implies that experienced success and acquiring new skills provide direct evidence of competency, i.e. the ability to successfully overcome the challenges of a situation the individual is placed in. Furthermore, indirect experience is based on modeling (as a form of social learning), through the agency of the experiences of others and the perception of the consequences of the behaviors of actors. The next determinant, verbal convincing, relates to a powerful persuasive effect in order to convince an individual that they possess the abilities required for success in a certain area. Finally, psychological (cognitive) status and emotional state produce changes in the body that provide the person with extra information needed for estimating their own competency in a given situation.

According to Bandura (1997), in order for a measure of self-efficacy to be useful in explaining motivated behavior and sports success, it is necessary that it is built in the scope of the rules of theory and that the measures used are specific to the area of execution. Felts & Lirgg (2001) in their meta-analytical study of the relationship between self-efficacy and sports performance report on low correlation coefficient (r = .26) between self-efficacy and the measures of performance in studies where the measures of self-efficacy weren't aligned with the measures of performance (when different abilities were estimated, to be more exact). However, in studies where the estimates between self-efficacy and the outcomes were congruent, a higher correlation coefficient was found (r = .43). Also, Felts & Lirgg (2001) list findings of studies where it was found that coaches modeling with instructions and exercises, reward statements and verbal convincing had a positive effect on the belief of self-efficacy in players and teams. Many authors stress the importance of the perception of self-efficacy (e.g. Cox, 2005; Trninić, Kardum & Mlačić, 2008; Šetić, 2018). Self-efficacy can be a powerful predictor of success in sports, under the condition that a distinction is made between the effects oriented on the process and effects oriented on the outcome. In other words, as stated by Tresure, Monson, and Lox (1996), self-efficacy is a better predictor in process-oriented athletes. Furthermore, when the physical abilities of athletes are equal, self-efficacy is a powerful indicator of performance, especially in martial arts. In regards to that, Kane et al. (1996) believe that self-efficacy is the best indicator of performance in overtime of wrestling matches. When the wrestlers are of equal physical ability and when they are physically equal at a high level of competition. Research has also shown that perceived self-efficacy is a good predictor in explaining individual estimates of success of football players (Šetić, 2018).

Football is a very specific sport that has continuously developed and where the models of play have changed over time, so that the system of play today is very elastic. A system with a strict arrangement and function of players is no longer at the forefront, but a certain conception that gives the game sense and specificity of action of a team in the same system of play. The arrangement and actions of players depend more and more on the position and the movement of the ball on both offense and defense. The tempo has also increased, which can be seen in fast transition from defense to offense and vice-versa, so top-tier football today requires players of universal character, with regards to all the components needed for achieving great results in play. It doesn't matter if we talk about the offensive or the defensive phase, all players of a team participate in the realization of every phase of play. Football consists of four phases and their respective subphases (Bašić, Barišić, Jozak, and Dizdar, 2015): the offense phase, the defense phase, defense to offense transition (transition upon gaining the ball), offense to defense transition (transition upon losing the ball). Based on the above, success at football depends on the technical/tactical execution of every player within the four listed phases of play, regardless of their position within the team.

Mouloud & Elkader (2007) have conducted a study on a group of amateur football players and the results they got point to high self-efficacy among football players. However, the authors didn't find statistically significant differences in self-efficacy in football players based on their positions. The results are inconsistent with the results found by Kirkcaldy (1982) and Andrew et al. (2007).

The aim of this paper was to examine the contribution of the of football experience (length of career) and the self-assessment of tactical/technical and social competencies in football players relative to the perceived self-efficacy of junior and senior football players. Secondarily, research was oriented on determining the differences in self-efficacy in regards to a player's position.

An insufficient amount of research in this area, as well as the existing inconsistent results (although with differing research methodologies) on the connection between success at football and self-efficacy, we expect that the length of football experience and a self-assessment of technical/tactical and social competencies will be significant in explaining self-efficacy in football.

## Methods

### *Study design and procedure*

Research was conducted as cross-sectional study among football players of teams competing in Premier league of BiH (PLBiH - highest rank). To meat eligibility criteria, team had to spend at least two consecutive years competing in PLBiH and junior league. All procedures regarding the data collection were done during first 5 days of winter preseason preparation period in 2018/2019. Mobile team of two researchers collected the data on different time points in different locations from six professional football clubs in BiH. Teams' representatives signed written informative contest for their players. Two football clubs did not meet the eligibility criteria.

Data was collected individually for each participant. Firstly, the participants were introduced to the purpose of the research and the method of estimate. Every player has individually ciphered their questionnaire according to the researchers' instructions. They filled the questionnaires (using pen and paper). There was no time limitation on filling the questionnaire, but it took around 15 minutes on average for each contestant. Study was conducted according to the Ethical standards of Helsinki convention.

### *Sample of participants*

To meet eligibility criteria, besides being member off professional football team and competing at highest senior or junior level, participants had to be without serious injurie which disabled them for playing during past 6 months. A total of 164 players from six football teams that competed in the professional Premier League of Bosnia & Herzegovina have participated in

this research. Age structure of participants: 79 were senior players (age: 25.15±4.21 yrs.) and 85 were juniors (age:17.23±0.49). Goalkeepers were excluded from the study.

*Instruments and variables*

A questionnaire on the general information on the players was constructed specifically for this research and it encompassed data on age, selection, the player's club, the length of their tenure with the club, position in the team and the length of playing football (length of football experience).

Self-efficacy was measured with a Scale for estimating self-efficacy in football players created by Šamija & Bosnar (2010). The scale contains 21 claims related to the estimate of the efficacy of performing certain actions (example of particle 4: „I have no doubts in the accuracy of my shot even when I have missed several likely chances during the game"). The players' task was to make estimates using a Likert-type scale (from 1 - entirely disagree, to 5 - entirely agree), where a higher score signifies a higher level of self-efficacy. Overall score was calculated as sum of the given answers. The questionnaire possesses a satisfactory internal reliability coefficient of α = .840, which was confirmed in our research where we got a coefficient of internal reliability of α = .893.

Self-efficacy of competencies was measured with a Scale for estimating tactical/technical and social competencies at football (Šetić, Kolenović-Đapo, and Talović, 2017). The authors have conducted a validation study that has shown a four-factor structure and good metrical characteristics. The first factor encompasses offensive tactical/technical competencies (OTTC) and contains the abilities and skills that are necessary during the offense phase, such as the long and short pass, scoring goals, the ability to keep the ball (example of a particle: „I make the last pass (I assist in scoring goals)."). The second factor encompasses defensive tactical competencies (DTC). This factor includes abilities such as: strict coverage of an opposing player, reducing the maneuvering area for the opponents, maintaining defensive pressure (example of a particle: „I pressure the player who is close to the ball. "). The third factor encompasses technical competencies in a duel (TCD) in the air, blocking shots, clearing the ball in a duel (example of a particle: „I am successful in an aerial duel. "). The fourth factor encompasses social competencies (SC) that are necessary in every phase of play (example of a particle:" I have timely communication with teammates during a game (verbal and nonverbal signals to teammates are required. "). Individual successfulness was estimated by the players on a scale of 1 (bad performance) to 7 (excellent performance). The scale contains a total of 42 football elements. A higher result points to a higher level of successfulness. Sum of the answers was noted as overall score. The calculated coefficient of internal reliability is high and it was α = .986.

*Statistical analysis*

Data are presented as mean ± standard deviation. Data analysis was performed using software package SPSS (ver 21.0, IBM). Normality of data distribution was checked using Kolmogorov – Smirnov test. Regression model analysis was done to determine contribution of football experience and self-assessment of tactical/technical and social competencies in explaining football self-efficacy. Cronbach's α coefficient was used to assess internal reliability for self-efficacy in football players. Statistical significance was set at $p<0.05$.

## Results

From Table 1 it is observed that the average score for the self-efficacy assessment in senior players was 85.73±8.73, with similar value for junior players 85.54±9.88. The average length of football experience in senior players was 16.76±3.89 years, while the average value for junior players was 9.02±2.58 years. The average score of self-assessment for tactical/technical and social competencies in senior players was 172.53±43.09, while the average score in junior players was 216.10±36.01.

**Table 1.** Descriptive statistical values for variables included in the research

| | Selection | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|---|
| Senior | Self-efficacy | 79 | 85.73 | 8.73 | 68.00 | 104.00 |
| | Length of football experience | 79 | 16.76 | 3.89 | 8.00 | 26.00 |
| | Self-assessment of tactical/technical and social competencies | 79 | 172.53 | 43.09 | 80.00 | 281.00 |
| Junior | Self-efficacy | 85 | 85.54 | 9.88 | 55.00 | 105.00 |
| | Length of football experience | 85 | 9.02 | 2.58 | 2.00 | 13.80 |
| | Self-assessment of tactical/technical and social competencies | 85 | 216.10 | 36.01 | 141.0 | 289.00 |

To answer the outlined research problem, we have conducted a standard regression analysis to ascertain the predictiveness of the model in explaining football self-efficacy in junior and senior players (Table 2 and Table 3.). Set model of the length of football experience and the self-assessment of tactical/technical and social competencies in senior football players was statistically significant where the F value is 4.640 (p=0.013). The model contributes 8,5% of the explanation of the perceived self-efficacy of senior football players. Length of football experience has a higher contribution to explaining perceived self-efficacy (β = 0.229, p=0.04). The contribution of self-assessment of tactical/technical and social competencies has a lower contribution (β = 0.208), but it isn't statistically significant (p=0.06).

**Table 2.** Standard regression model of football experience and self-assessment of tactical/technical and social competencies in explaining football self-efficacy in senior players.

| | B | p | β | t | p |
|---|---|---|---|---|---|
| Length of football experience | .513 | .245 | .229 | 2.091 | 0.04 |
| Self-assessment of tactical/technical and social competencies | .042 | .022 | .208 | 1.900 | 0.06 |
| | | | R=0.33 | | |
| | | | $R^2$=0.109 | | |
| | | | $cR^2$ =0.085 | | |
| | | | F (2,78) =4.640 | | |

Table 3 shows that the same set model is statistically significant in junior players (F=8.013, p=0.01). The model explains 14.3% of the variance of the criterion variable. At the same time, the self-assessment of tactical/technical and social competencies is a powerful predictor of perceived self-efficacy β = 0.408 (p=0.001).

**Table 3.** Standard regression model of football experience and self-assessment of tactical/technical and social competencies in explaining football self-efficacy in junior players.

| | B | st. p | β | t | p |
|---|---|---|---|---|---|
| Length of football experience | -.57 | .400 | -.015 | -,142 | 0.89 |
| Self-assessment of tactical/technical and social competencies | .112 | .020 | .408 | 3.903 | 0.001 |
| | | | R =0.404 | | |
| | | | $R^2$ =0.163 | | |
| | | | $cR^2$ =0.143 | | |
| | | | F (2,84) =8.013 | | |

## Discussion and conclusion

In accordance with the theoretical foundation, as Culos-Reed et al. (2001) list four main determinants that act upon the perception and expectation of one's own efficacy as follows: the experience of success and skill, indirect experience, verbal convincing (persuasion), and psychologically-affective state, where the experience of success and skill are the most influential determinant of belief in one's own self-efficacy which is developed through the agency of achievement. We have assumed that a player with a longer football experience gains more positive experiences, and that players that have a perception of higher competencies also have a higher perception of self-efficacy. We can conclude that, based on the calculated results and the conducted analyses, the model that encompasses the length of football experience and the self-assessment of technical/tactical and social competencies of football players combined contribute 8.5% of the explanation of perceived self-efficacy in senior football players. In senior players, the length of football experience has a higher significance than the perceived successfulness at performing football elements. So, the set model does not have an equal contribution in junior players, where the model in its entirety contributes 14.3% of the explanation of perceived self-efficacy, where perceived successfulness in performing football elements has a higher and statistically significant contribution.

The model that encompasses the length of football experience and the perceived successfulness in performing football elements (tactical/technical and social competencies in football) is not equally predictive in juniors and seniors.

We have concluded that the set model is more predictive with junior players compared to senior players, where self-assessment of successfulness in junior players (40,8%) is significant and higher compared to senior players (20.8%) in terms of predicting perceived self-efficacy. In terms of the length of football experience, the situation is reversed in junior and senior players. Football experience is more and significantly predictive in seniors (22.9%) compared to junior players (1.5%).

In this research, we have not encompassed other factors that can contribute to a perception of self-efficacy, and that is especially related to indirect experience, verbal convincing where a coach's role should be of extreme importance, especially the feedback that the player gets from the coach. We can assume that it would be especially important to encompass the current psychological state of a player in future research. The current psychological state of a player can be affected by a large number of factors that appear during a period of competition, especially things like recent success or failure experiences, both individually or as a team, as well as current team mood and competition anxiety, because those are the most commonly listed psychological factors that affect situational performance. As far as the unequal contribution of the set model between junior and senior players is concerned, we can assume that the cause is mainly the structure of the sample. The sample of junior players is homogenous in the sense of the chronological age of players (16 to 18; experience span - 9.02 yrs), while the age range in senior players is much wider (18 to 34 experience span - 16.76 yrs). The age of players is an important factor in a development sense, i.e. in the sense of the development period that the players are currently in, which could affect various importance of factors that we did not control in this research, but which could affect the contribution of the model to the perception of self-efficacy. It is especially important to take into account the specificity of the Premier League of Bosnia & Herzegovina, where we have several established teams that show serious professional tendencies, while other teams are heterogeneous in every sense. We are of the opinion that future research for senior players (professionals) should take into account the factors that will try to present one's own perception of successfulness during one's career, factors such as playing outside of Bosnia & Herzegovina, the length of international experience, playing for the national team, and finally, one's own perception of satisfaction with their career. In addition to the above, in order to piece together that mosaic in future research, it is necessary to encompass a significant portion of potential predictors for the perceived self-efficacy of estimating earlier experiences of success, indirect learning, the role of a coach, and the player-coach relationship, as pointed to by Felts & Lirgg (2001), as well as the current psychological state (especially mood and anxiety).

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**Conflicts of interest/Competing interests**
The authors declare that they have no conflict of interest relevant to the content of this article.

**Availability of data and material**
The data that support the findings of this study are available on reasonable request from the corresponding author

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