



## Physical Fitness and Emotional Quotient Toward Soccer Referees Performance

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### Abstract

Physical fitness and Emotional Quotient (EQ) are important aspects for referees. This is because the distance traveled by the referees during the game is related to soccer players and psychological disorders often experienced by the referee. However, the training as an effort to refine the performance of the referees has not been done yet. Based on these facts, this study was aimed at analyzing: (1) the contribution of physical fitness to the performance of referees; (2) EQ contribution to referees' performance, and; (3) the contribution of physical fitness and EQ simultaneously and significantly to the performance of the referees. To achieve such purposes, this study used correlational descriptive method by involving 71 members of soccer referee in PSSI (Indonesia football association) association of Pekalongan and Batang Regencies as the population in this study. The population was sampled into 68 active referees. Their physical fitness data were obtained through psychomotor tests using FIFA Fitness Test guidelines. Meanwhile, EQ data were obtained through a test by using Assessing Emotions Scale guidelines. Besides, the performance referee data were obtained through the assessment done by the match supervisor using referee assessment guidelines and assistant referees applicable in PSSI. The data obtained were analyzed using path analysis and resulted the significance value of 0,05. The results showed that the performance of the referee is contributed by: (1) Fitness Test equal to 5.06%; (2) EQ equal to 15.28%; (3) Fitness Test and EQ together equal to 52%.

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## INTRODUCTION

Football match requires important inevitable components in order to make it clearly done. These components include players from both teams, coaches, officials, spectators, medical personnel, security guards and match officials. In the general rules of the Indonesia Football Association (PSSI) chapter VIII (2008), there stated three components of match components, namely Match Commissioner (MC), Referee Inspector (RI), and Referees (including 2 assistant referees and fourth official if any assignment).

Referee is someone who has the authority to organize the course of a sport competition, a person who is considered neutral and acts as the person who will solve the problem on the football field (Herdiansyah & Nurasyifa, 2010). Referee's authority is absolute in maintaining the rules of the game where he is assigned (Laws of The Game, 2015). His duties and responsibilities are as court and games leader in the field. Those are done by supervising and applying the rules correctly, decisively, appropriately and fairly in accordance with the rules of the football game (FIFA Laws of The Game).

Physical Fitness is important for referee because the travel distance of a referee during the match correlates with players (Weston, Castagna, Impellizzeri, Rampinini, & Abt, 2007). In addition, physical fatigue also remains an important factor in the activity of a referee (Fruchart & Carton, 2012). Accordingly, given aerobic performance is positively correlated with performance in the game, it is important for referee to be trained to improve his ability to reach distance during the match and also to keep them in high intensity (Castagna & Abt, 2013). To optimize the physical preparation of referee, the application of intensive and intermittent training sessions should be prioritized on the high intensity of aerobic stimuli (Helsen & Bultynck, 2004).

Referee's movements are made only in order to be in the best position to make the right decision. It makes the referee move continuously during the game and follow any kind of game tempo (Castagna & Abt, 2013). In addition, the

difference of game tempo in the football match also affects the physical performance of the referee as he has to produce higher speeds to keep pace with the game. Since 2005, FIFA has introduced a new fitness test before the start of a major tournament to evaluate the referee's fitness standards and referee's assistant. Alternatively, three days before the tournament, all officers will perform two fitness tests on athletic tracks during 90 minutes session (Mallo et al., 2009).

Referee's population continues to increase every year despite the existence of dangers in it. The dangers are such as assault, death threats, unfavorable weather conditions, injury prone fields, stress, and psychological unbalance in football match (Agyei, 2010). In relation to this, football referee, in carrying out his duties is always in the pressure that may result in psychological disorders or experience mental stress. These are influenced by the pressure either from the players or from the audiences inside the stadium. Therefore, any situations are very influential on every decision taken by the football referee. In addition, the referee is required to observe the game by interpreting the law of the game fairly and decisively (Sayfollahpour, 2013). Besides, a referee with higher emotional intelligence tends to be lower in experiencing psychic fatigue (Alam, Mombeni, Maleki, Monazami, & Alam, 2012).

An interview on April 4, 2017 to Mr. Drs. Suprihatin, as the disciplinary commission of PSSI ASPROV (Provincial Association) of Central Java, who is also active as a national referee instructor and assessor is conducted to strengthen the interrelationship between variables. From the results of the interview, the data revealed that: (1) the referee is a judge in charge of deciding any cases in a football match; (2) in relation to accuracy in decision making, the referee is required to be close and positioned exactly with the event (ball played); (3) psychological conditions greatly affect the decision of the referee. As a judge, the taken decisions must be in accordance with condition in the field. As a result, a referee should be consistent in determining the condition, despite the different job pressures in each game.

Referee performance is the key to the overall success of the game. Performance is a result of work which has been done by a person in performing his duties. If a person does not control his emotions well, it will cause difficulty in controlling his emotions and ability to focus on his duties and result difficult thoughts. Then, it can be concluded that emotional intelligence plays an active role in influencing the referee's performance in doing each task. If someone has high emotional intelligence, he will be easier in controlling his emotions well when doing his duty.

Based on the description above, the researchers conducted this study with the aims of analyzing: (1) the contribution of physical fitness to the performance of referees; (2) EQ contribution to referees' performance, and; (3) the contribution of physical fitness and EQ simultaneously and significantly to the performance of the referees.

## METHODS

This used used correlational descriptive method by involving by involving 71 members of soccer referee in PSSI (Indonesia football association) association of Pekalongan and Batang Regencies as the population in this study. They were sampled into 68 active referees. Further. their data were analyzed by using path analysis with the significance value of 0,05.

For more, variables in this study were divided into two groups, namely independent variable and dependent variable. The detail of these variables is as follows: the independent variable consisted of physical fitness ( $X_1$ ) and EQ ( $X_2$ ). Meanwhile, the dependent variable was the performance of football referee ( $Y$ ).

The instrument used for determining physical fitness and performance was the Fitness Test and Referee Assessment guidelines used by FIFA and PSSI. Meanwhile, for assessing referee's EQ, the researchers used Assessing Emotions Scale (Nicola S. Schutte, John M. Malouff & Navjot Bhullar, 2009).

Physical fitness data were obtained through psychomotor tests using FIFA Fitness

Test guidelines, while EQ data were obtained through a test using Assessing Emotions Scale guidelines. Also, referees' performance data were obtained through assessment by the supervisor of the game using referee assessment guidelines and assistant referees applicable in PSSI.

Normality test used to examine the data was realized by the use of *Kolmogorov-Smirnov Test* with IBM SPSS 16.00. *Kolmogorov-Smirnov Test* was seen on the line of Asymp. Sig (2-tailed). If the value is  $<0.05$ , so the data are not normally distributed. Meanwhile, the linearity test was seen from the significance value of the deviation from linearity for the independent variable to the dependent variable. If the value of significance  $> 0.05$ , it can be concluded that the relation is linear.

Another test conducted was multicollinearity test. This test was aimed at determining whether there was a significant relation between independent variables with the benchmark VIF value (*variance inflation factor*). If the value of VIF around the number 1 or has a tolerance value close to 1, it could be concluded that there is no problem of multicollinearity. Also, heteroskedasticity test was used to know whether or not there was deviation of classical assumption of heteroskedasticity or the existence of variant inequality of residual for all observation in regression model.

## RESULTS AND DISCUSSION

The presented data description covered mean (M), median (Me), mode (Mo), standard deviation (SD), and frequency distribution percentage of the study results. Moreover, the following is the recapitulation the research data tendency.

The data obtained in this study were tested for their normality using the Kolmogorov Smirnov Test at the significant level of 5% ( $\alpha = 0.05$ ) and the provision that the data were normally distributed if the significant value  $> 0.05$ . The calculation results showed that the value of Asymp. Sig. (2-tailed) of the physical fitness equal to 0.088, Emotional Quotient of 0.052, and Performance of 0.071. From these

results, it could be concluded that the each data variable was normal.

**Table 1.** The Recapitulation Tendency of The Data

V	Categories (%)				
	A	B	C	D	E
X <sub>1</sub>	22.06	29.41	19.12	17.65	11.76
X <sub>2</sub>	17.65	38.24	13.24	23.53	7.35
Y	5.88	10.29	19.12	20.59	44.12

Notes:

- X<sub>1</sub> = physical fitness
- X<sub>2</sub> = emotional quotient
- Y = performance
- A = excellent
- B = good
- C = enough
- D = poor
- E = very poor

The linearity test can be seen from the significance values of deviation from linearity for X<sub>1</sub> to Y, and X<sub>2</sub> to Y in the SPSS table. If the value of significant > 0.05, it can be concluded that the relation was linear. Vice versa, if the value of significant achieves < 0.05, it can be concluded that the relation between each variables is nonlinear. Accordingly, the result of linearity test between physical fitness toward performance equal to 0,585, and Emotional Quotient to Performance equal to 0,256. From these calculations, it could be concluded that the relation were linear.

Multicollinearity test was aimed at determining whether there was a significant relation between independent variables with a benchmark VIF value (*variance inflation factor*). If the VIF value is less than 10, it can be concluded that there is no multicollinearity problem. Further, the multicollinearity test result between Physical Fitness variable to Performance was 1.581, and Emotional Quotient to Performance was 2,060. These results showed that there was no multicollinearity problem.

Also, heteroskedasticity test was used to know whether or not there was deviation of classical assumption of heteroskedasticity, namely the existence of variant inequality of residual for all observation in regression model. For this, the prerequisite that must be fulfilled in

the regression model was the absence of symptoms of heteroscedasticity. Meanwhile, the results of the research data showed that there was no symptoms of heteroscedasticity.

Based on the results, the hypothesis testing in this study was done in the following.

### First and Second Hypotheses Testing

Based on the explanation in table 2, it can be seen that the significance value of physical fitness model coefficient was 0.032. By having the sig value of 0.032 < 0.05, it meant that the path analysis coefficient was significance. Therefore, physical fitness contributed significantly to the referee's performance.

**Table 2.** First and second Hypotheses Testing

Model coefficient	Beta	t	Sig.
Physical fitness	0.225	2.194	0.032
Emotional quotient	0.391	3.337	0.001

Based on the explanation in table 2, it can be seen that the value of the coefficient significance of the EQ model was 0.001. Through sig value of 0.001 > 0.05, it meant that the path analysis coefficient was significant. Thus, EQ contributed significantly to the performance of the referee.

### Third Hypotheses Testing

The amount of contribution can be shown by the percentage of R square value. Based on the exposure of table 3, it can be seen that the R square value was 0,520. Thus, it could be concluded that the magnitude of the contribution of physical fitness and EQ which directly affected the performance of the referee was 52%.

**Table 3.** Third Hypotheses Testing

R	R square	Adjusted R square	Std. error of the estimate
.721 <sup>a</sup>	.520	.505	.22351

a. Predictors: (Constant), Physical fitness, Emotional quotient

b. Dependent Variable: Performance

The results of the 1st hypothesis testing in this study showed that physical fitness contributed significantly to the performance of the referee. Thus, the test results accepted the

research hypothesis. These results were suitable with the results of the study which was conducted by Michael Agyei (2010) that the referees in Ghana who show significant PFT (Physical Fitness Test) performance perform better while leading, regardless of their age level. To manage the match, the referees move on the soccer field without any restrictions. In addition, the referees must also produce higher speeds to keep pace with the match (Mallo et al., 2007).

Based on the description above, it is expected that football referees always improve and maintain their fitness to fulfill the criteria which are applied by the federation (PSSI). It aims to improve performance in the accuracy in decision making, so the quality of football match will increase too.

The result of second hypothesis testing in this study showed that EQ contributed significantly to the performance of the referee. Thus, the test result accepted the third hypothesis. These results were suitable to the results of the research which has been done by Shahram Alam, Hedayat Mombeni, Behnam Maleki, Maryam Monazami, Zahra Alam, Maryam Vatandoust & Abdolmahdi Nasirzade (2012) that referees with higher EI may be better in assessing, regulating and exploiting their own emotions and others.

Research conducted by Setyaningrum, (n.d.) shows that self-awareness, self-regulation, motivation, empathy and social skills have significant partial and simultaneous influence on performance variable. The results of this study also show that the dominant variable which has an influence on performance is a self-awareness variable.

The results of other studies indicate that there is positive and significant influence partially between the variable of Emotional Intelligence to Performance (Hadiat, 2016). Emotional intelligence is the key in which a person can manage his "hot spots" so as not to get out of control and act without thinking. By developing self-awareness and self-management, it is expected that referees are able to harness the strengths, skills and manage the emotions, so referees can feel and create a passionate commitment to achieve the goal. Also,

understanding others makes us more effective at motivating individual, guiding group, team, and organizational culture.

Based on the description above, it is expected that football referees can always control their emotions while leading the game, despite get the pressure from football players, team officials, and spectators. It aims to improve performance of accuracy in decision making, so the quality of football match will also increase.

The results of hypothesis testing in this study showed that physical fitness and EQ contributed simultaneously and significantly to the performance of the referee. Thus, the test results accepted the hypothesis. The psychological demand from referees and performance appraisal have been instigated by more research in recent years (Mascarenhas, O'Hare, & Plessner, 2006; Plessner & Haar, 2006).

Referees who feel anxious, tense, and under pressure are influenced by the environment, spectators, coaches, players and the media. Accordingly, referees with higher EQ levels may be less prone to fatigue. Although in general, EQ is gained since they were born, and it may develop during life through training and effort and acquisition of new skills (Shields & Warner, 2007). Therefore, it is recommended that the EQ training program should be set up for referees to prevent and reduce fatigue in their body. It should be noted that this training does not mean giving advice to referees, but they need to be sensitive to raise awareness of their emotional dimensions.

Therefore, it is recommended that the EI training program should be directed to the referees in order to prevent and reduce fatigue. It should be noted that EI training does not mean giving advice to referees; on the other hand, it means to encourage referees to be sensitive to their emotions and raise their awareness of their emotional dimensions. The emotional skill they have learned can facilitate their communication with others. As a result, interpersonal interactions and interpersonal performance may increase. In addition, EI training can increase awareness of human emotions and improve listening skill,

effective interaction, emotional expression, conflict resolution, overcoming mental pressure, which consequently reduces fatigue on the sight of referee.

Different factors do not have the same impact on destabilization decisions. Emotions and verbal aggression have never been considered by the referee as factors driving them to disrupt the stability of the match. It is surprising and worrying that verbal aggression is not considered by the referee. Also, many thought that this would have a deterrent effect on the decision to mess up the match. On the other hand, this kind of aggression has become a natural thing in the area of football. This fact is related to the conclusions that the referees continuously get confronted with verbal aggression (Folkesson et al., 2002). Their frequency can be regarded as a normal behavior. Therefore, it would be interesting to investigate other type of aggression such as physical aggression.

The sign given by the observer is a primordial factor in the use of this destabilization strategy. This statement emphasizes in the important role of these individuals in the arbitration system because their responsibility relate to the possible promotion that can be obtained by the referee in the structural hierarchy.

EQ training may increase emotional awareness and improve listening skill, effective interaction, emotional expression, conflict resolution, solving mental pressure which consequently reduces fatigue in referees. As a result, their interpersonal interaction and referees performance can be better. With the training, it is expected that improvement to the performance of referees will also increase. This is important to do so that the quality of the game is also increasing.

## CONCLUSION

Based on the RESULTS and discussion, several conclusions are drawn as follows: (1) physical fitness contribute significantly toward referee performance. From the research findings, so the hypothesis which stated that "fitness contributes significantly to referees' performance" is acceptable; (2) EQ contributes

significantly to referees' performance. From this research finding, so the hypothesis which stated that "EQ contributes significantly to referees' performance" is acceptable; (3) physical fitness and EQ contributes simultaneously and significantly to referees' performance. From research findings, so the hypothesis which stated that "physical fitness and EQ contributes simultaneously and significantly to referees' performance" is acceptable.

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